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ABSTRACT

These nine papers from a conference of the International Research Network for Training and Development focus on occupational classification, standards, and certification. "Introduction" (Joao Oliveria) presents synopses with highlights from the papers. Part I offers an overview of recent developments in the United States in "Occupational Standards and Certification: Past-Current-Future Trends in the United States" (David Fretwell, Sandra Pritz); Canada in "The Delimitation and Certification of Occupations in Canada" (David N. Wilson); and France, Germany, and the United Kingdom in "Industrial Certification: Lessons from Europe' (W. G. McDerment). The papers highlight issues of delimitation and certification, the role of governments, and the weight of social traditions and institutional forms in shaping new solutions. Part II allows the reader to compare how three countries--the United States, Ireland, and the Netherlands--converge on the essentials while maintaining their own ways of going about the business of occupational delimitation in "An Examination of the Work of Purchasing Managers in the United States Using Job Comparative Techniques" (Eugene W. Muller); "The Development and Implementation of National Vocational Qualifications in Purchasing: Some Issues of Validity and Value" (Andrew Erridge); and "Job Profiles of Purchasing Professionals" (M. Mulder, M. Bellemakers). Part III highlights three emerging issues. "Basic Skills: An Approach to Occupational Classification" (Joao Oliveira) suggests ways in which basic skills may form a conceptual foundation to occupational delimitation, standard setting, and certification. "A Converging System? Explaining Difference in the Academic and Vocational Tracks in England and Wales" (Tim Oates) characterizes factors that affect convergence and divergence in the academic and vocational pathways in the education and training system. "Occupational Standards and Business Ethics" (Judith Marquand) introduces an empirical and conceptual framework for addressing ethical considerations related to occupational standards and certification. (YLB)

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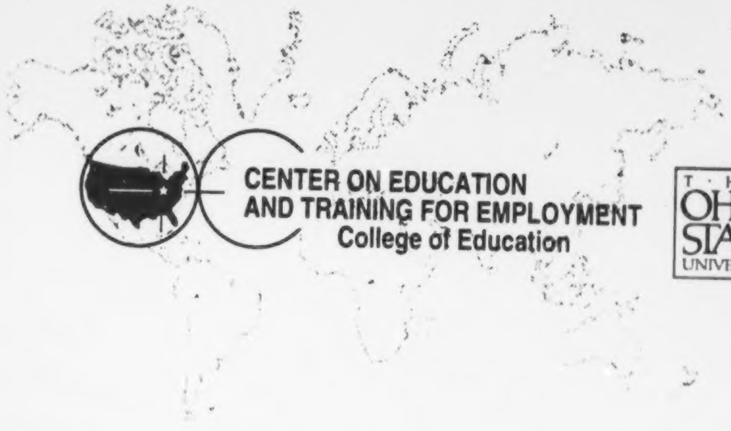

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Occupational Standards:
International Perspectives

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1995

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Foreword

Much of the work of the Center on Education and Training for Employment in the 1990s has been undertaken in the international sphere to promote the sharing for mutual benefit of what people in many places are experiencing and learning that is relevant to improved preparation for employment. When multiple perspectives on common questions can be discussed, the outcome is likely to be an enhanced ability to make progress toward sustainably productive economies.

It is in that spirit that the Center is responding to the opportunity presented when a number of researchers gathered for a conference of the International Research Network for Training and Development to discuss their papers on the topic of occupational classification, standards, and certification. All countries are facing widespread changes in the workplace, in defining what constitutes an occupation, and in identifying the requirements for successfully performing its tasks. The publication of these papers makes it possible to expand the dialogue considerably.

Readers will become aware rather quickly of the international flavor of this publication, as each paper retains the stylistic practices and spelling of the country of its origin. This is certainly in keeping with the subtitle: International Perspectives.

The Center would like to thank all the authors who contributed their papers and especially João Oliveira, the author who volunteered to edit the compilation and write the introduction. As the document goes to press, Dr. Oliveira has just undertaken the position of Deputy Secretary of Education in his native country of Brazil, on leave from the World Bank. In this position, he will face the challenges of the occupational standards issues in a new way. Dr. Oliveira was assisted by Sandra Pritz, Research Specialist at the Center, who coordinated the publication. David Halsey managed the publication process and Kathy Kush prepared the manuscript for publication.

Ray D. Ryan
Executive Director
Center on Education and
Training for Employment

Introduction

Throughout the industrialized world, economic factors such as the international framework of national economies, the consolidation of regional economic blocs, technological changes in production, and innovations in the delivery of services have placed new demands on education and training and eroded traditional occupational standards, boundaries and certification requirements. The new demands have created new challenges but also new opportunities for the workforce. The new demands may increase the status of technical occupations, and indirectly, may increase the status of vocational and technical education and training streams. The results are already visible: OECD countries, newly industrializing countries of Asia, and countries as diverse as Turkey and Mexico are all taking up the challenge of redefining occupational categories in flexible ways that allow these rapidly changing demands to be met.

In North America, the United States has taken the lead (Chapter 2). Past initiatives, most of which were inarticulate, decentralized, or initiated by the private sector, have brought about a national focus, as documented in such articles as "Investing in People: A Strategy to Address American's Workforce" (1979); "America's Choice: High Skills or Low Wages" (1990), "America 2000 Goals" (National Education Goals Panel (1991), and the SCANS Report (Secretary's Commission on Achieving Necessary Skills), "What Work Requires of Schools" (1991), the most popular in this series.

In response to economic decline and the increased export of low-paid industries during the 1980s, Canada (Chapter 3) created the equivalent of a National Training Board and embarked on a selective program of occupational delimitation for the jobs considered more critical for the economy. These changes are already leading to extensive improvements in the country's systems of training and certification, including the revision of the former Red Seals program. Mexico is also attempting to set up a national system of occupational certification, prompted by the new challenges of a common regional market created with the approval of the North American Free Trade Agreement (NAFTA).

Changes in Europe are no less profound. The UK, France, and Germany show some of the changes in the structure of occupational delimitation and certification procedures (Chapter 4). Changes in these countries also demonstrate how historical, cultural, and institutional aspects interact to demand responses by education, training, and certification agencies. In Germany, most of the changes apparently can be accommodated within their robust dual-training system with no major difficulty. In France, however, where training is deeply embedded in educational structures, the changes are affecting curricula. Schools are also having to respond to the societal demand for more respectable secondary-school leaving certificates in the vocational/technical fields. In the UK, a highly flexible system of certification has emerged, as well as an increasing overlap between academic and technical education.

Other parts of the world are witnessing similar changes. Australia, as a prime example, is developing a comprehensive system of occupational classification, inspired by the United Kingdom's

NVQ. In North Korea, occupational certification played a major role in industrialization, and it still stands as a measure of quality that has bolstered the prestige of vocational and technical occupations.

Even in Russia, where international competition has only recently opened up, discussion is already underway about using international standards to assess the quality of its training institutions and their graduates. The discussion follows the assumption that externally imposed standards could induce quality—first in the workforce, then in the workplace—ultimately making Russian products competitive on the global market.

What can really be expected of these changes? Can they improve the relevance of education and training curricula? The quality of graduates? The efficiency of labor markets? The productivity of firms?

Such questions were recently discussed by a group of researchers under the aegis of the International Research Network for Training and Development (IRNETD). The quality of the debates motivated the editor to put some of these papers together to share them with colleagues concerned with the broader issues of education training. The following synopses provide highlights from the papers, but do not begin to do justice to their breadth and depth.

1. *Market forces challenge standards and expand occupational delimitation*

Old job descriptions became too narrow when their standards could no longer respond to the demand for higher efficiency and quality. And, as is clear the world over, when the nature of the skills required to compete changes, so do labor markets. They demand a flexible labor force capable of learning and developing new skills.

New occupational categories with a broader intellectual base are creating new opportunities for advancing the workforce not available before. Supply-driven attempts to create a highly qualified and broad-based workforce—where pressures for efficiency and high quality are absent, or where industrialization is incipient—are probably not sustainable in the long term. Similarly, to award occupational certification in countries where labor markets do not need or value such certificates is useless. But where there is demand, there is opportunity for development.

2. *Most employers seem more interested in broadening the basis of occupations than on certification alone.*

Setting up standards suitable to the skills required of an occupation usually does not meet with resistance from employers, unless the requirements are set at unnecessarily high levels. In Canada and other countries, employers are ready to join forces to define new occupational profiles and requirements, yet they are less ready to actually enforce them. Employers are only too aware of the fact that certification mechanisms may be barriers to flexibility and limit access of workers to labor markets, depending on how the mechanisms are set up and controlled.

Broadening occupational delimitation and individual skill requirements increases labor market flexibility. What employers mean by flexibility, rightly or wrongly, is not necessarily what educators, trainers, guilds, and professional associations have in mind. For example, a German car manufacturer will only be too happy to hire graduates of an apprenticeship in baking, because he trusts that the dual training system prepares flexible workers—not because they master a given menu of specific skills.

3. *Selectivity in occupational and certification requirements.*

In some areas, certification meets no resistance. Take the licensing of pilots and drivers in high-risk, high-cost, or highly regulated activities or individuals exposed to the consequences of malpractice. In Canada, the priority for setting new standards, especially the boundaries of certain occupations, was limited to a few dozen areas considered critical for the economy. In the United States, revisions of occupational definitions are basically voluntary and are undertaken by industrial sectors. The European examples point to the same direction. Even though changes are deep, and affect the entire occupational and training landscape, a pervasive overhauling of occupational classifications, standardizing, and certification mechanisms is not the route being taken.

4. *Even though changes are demand-driven, governments still play a catalytic role.*

Sustained government effort and heavy subsidies continue to be required in virtually all the OECD and industrialized Asian countries undergoing occupational change. Breaking up traditional occupational classifications and establishing new standards both require government arbitration and new legal and regulatory frameworks. Even in countries where occupational certification was traditionally enforced by the guilds or strong professional associations, central governments have to bring diverse interest groups together to work on the new concepts of occupational delimitation, standards setting, and certification. Government involvement is critical for sensitizing society and articulating the diverse, if not opposing, interests of employers, employees, and their organizations. Governments also mobilize efforts, provide a common framework, arbitrate conflicts, and, without exception, finance the revamping of existing systems of occupational classification and certification.

In all of the countries studied in this book, governments still need to play a decisive role in financing the revision of occupational standards and certification initiatives—otherwise they risk the collapse of standards altogether. This is due to a number of factors: the usual free-rider phenomenon, the fact that new occupational domains often do not fit within existing sectors or interest groups. But to a great extent, it is also due to the diverging interests of firms, industries, and society as a whole.

Special circumstances may warrant even more profound supply-driven interventions. In South Korea, for example, the prestige of occupational-technical streams was so low in the sixties that, as part of the new industrial policies, very high standards were set up that produced high prestige and financial rewards for those obtaining certificates. Even though only about 20 percent of those submitting to exams are approved, the mechanism seemed to bring to light the importance of adequately preparing the workforce to meet needs which were not even perceived by employers. Of course, this was done during a period of high growth and quick modernization of the economy.

5. The problems may look similar, but the solutions are not.

The attempt to develop a common system of standards and certification acceptable to all EC countries exemplifies the impossibility of trying to find one solution to fit many contexts. After many years of frustrated attempts to find an acceptable solution, CEDEFOP (the European Agency for Vocational Training) gave up all hopes of setting up common European frameworks for occupational standards and mutual recognition of certificates. To a large extent, the protection of local labor markets prevented a common solution. Countries are still not ready to automatically grant recognition of certificates from other countries—even though they are willing to grant it in individual cases. The fact that the system prevailing during the discussions was quite similar to the UK NVQ system also did not help break new ground.

In the end, the specificity of national education and training systems was the deciding factor against common standards. The deadlock illustrates how solutions are deeply embedded in the cultural, historical, and institutional characteristics of any country at a given moment. Even if countries are willing to borrow models from other countries, these solutions often do not fit legal frameworks concerning occupational delimitations, hiring, and remuneration. The relative power of certain guilds or professional associations and the status of vocational-technical vis-à-vis academic institutions and certificates also impede the replication of models.

6. A convergence of approaches is in the making.

Most of the European countries that did not agree to a common standard continue to observe each other and to progressively experiment with, adapt, and adopt new ideas and convergent approaches. The same is true in different trades and sectors in the United States. These sectors have agreed to work under a similar framework to develop broad-based occupational standards and basic skills under the umbrella of the Secretary of Labor. A more specific example of this converging trend can be found in the papers by Muller, Erridge, and Mulder & Bellemarks in Part II of this book. The three papers describe recent classification and standard setting efforts in the occupation of purchasing agent. The papers illustrate how countries as different as The Netherlands, Ireland, and the United States can converge in practices and on methodological approaches, while keeping their national idiosyncrasies.

7. Occupational certification hinges on the parity of prestige and esteem between education and training systems.

The redefinition of the occupational landscape seems to have increased the status of vocational-technical education. Higher educational levels are demanded of those entering the workforce, even of low-level job incumbents. More importantly, higher occupational standards are valued—even though the demand is not always clearly translated into a formal certificate, or a higher academic degree. Sometimes, such discussions, and their resolutions, fall far outside the focus of the productive sector.

In many countries, renewed interest in delimitation, standards and certification of occupations is viewed as an opportunity to rethink the relationships between education and training and to upgrade the status of vocational training institutions and certificates. The impact of solutions, however, differs a great deal, depending on local traditions. In German-speaking countries, where academic and vocational tracks are kept separate and the demarcation lines between the two are still very clearly marked, dual-training systems are strengthening the conceptual, theoretical, and technological content of training while dramatically reducing the number of specific occupations.

In other countries where academic education enjoys a much higher status than vocational/technical training, attempts are being made to increase the equivalence and transferability of certificates, so that the status of vocational-technical training can approach that of academic education. In Korea, as already mentioned, extremely difficult certification exams reward those passing with high social prestige and income. In the United Kingdom and France, quantitative targets are being established by governments to ensure that greater numbers of those leaving secondary-level school acquire a vocational-technical certificate of some academic standing. The United Kingdom in particular is working to keep the system as flexible as possible, and external to the logic of the education system.

On the educational side, the contention lies in whether or not to build bridges between the worlds of education and training and make certificates equivalent. But formal equivalence is not enough. The most formidable challenges lie in bridging the gap between the worlds of education and work, between learning and doing.

8. *Closing the cycle: Are basic skills the key to redesigning occupational classifications?*

Employers seem to attach more value to an individual's ability to learn, rather than the mastery of a given set of skills. Strategies that may help map out such trainability and transferability could increase the market value of individuals and set the course for future occupation delimitation. Jobs are becoming more intellectual and working, in most leading workplaces, is becoming synonymous with learning. Thus, the ability to learn and to transfer what was learned to new situations may well be a more suitable basis for delimiting occupations and setting individual trajectories within an occupational domain. Basic skills may become a measure of one's ability to apply knowledge, which would imply a broader base for occupational standards and classifications.

Basic skills is an old term, as noted in Fretwell & Pritz paper. Yet, a clear-cut definition of what "basic skills" means is yet to be accepted, given the complexity at hand and the difficulty now of distinguishing the frontiers between education and training. The following definition, not yet coined, illustrates the breadth of what is now considered basic:

> The term *basic skills* refers to those acquired abilities—primarily cognitive and language- or number-related—that are needed as a foundation for learning and for the performance of tasks, such as:
>
> - Reading processes for locating information and for using higher level thinking strategies to draw conclusions from multiple sources in order to solve problems.
> - Speaking and writing processes for organizing clear communication of ideas and for mastering those thinking skills that enable clarification, analysis, elaboration, and extension of spoken or written information.
> - Applications of mathematical concepts and processes for calculating information, collecting data, and solving problems that go beyond basic number concepts and computation skill drill and enable people to acquire proficiency levels in reasoning and interpretation.
>
> These skill applications all require the use of cognitive strategies and are seldom used in isolation, but generally cluster in combinations related to performance of specific job tasks.
>
> (Pritz, et al 1994)[1]

What seems new and promising for a great number of individuals in schools and in the workplace is the opening up of opportunities for acquiring and developing broad-based basic skills or competencies. At last, it seems that to a great extent, the competencies that prepare individuals for a successful occupation are becoming identical to those that produce contributing and relatively satisfied members of society.

The organization of the book

The book has three parts. Part I offers an overview of recent developments in the USA (Fretwell and Pritz), Canada (Wilson), and three European countries, France, Germany and the UK (McDerment). All of the papers highlight issues of delimitation and certification, the role of governments, as well as the weight of social traditions and institutional forms in shaping new solutions.

While Part I stresses different approaches to a same problem, Part II illustrates how, in spite of these differences, countries seem to converge when it comes to the actual task of identifying a basis for the delimitation of occupations and standard setting. The reader will be able to compare how three different countries—the Netherlands, Ireland and the United States—converge on the essentials while maintaining their own ways of going about the business of occupational delimitation.

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[1] Adapted from Pritz, Sandra; DeStefano, Johanna; Imel, Susan; Harrington, Lois; Kurth, Paula; Puleo, Nancy. *Workplace Literacy Teacher Training Series* (Columbus: Center on Education and Training for Employment and College of Lake County, in press).

Part III highlights three emerging issues. Following up on the historical overview by Fretwell and Pritz, Oliveira analyses recent trends in the United States concerning the concept of basic skills, and he suggests ways in which those skills may form a conceptual foundation to occupational delimitation, standard setting, and certification. Oates' chapter moves the discussion one step beyond by presenting the concrete institutional, organizational, and technological aspects that emerge when a country is attempting to deal with the thorny issue of equivalence between education and training certificates. At the end of the day, it is the assessment tools—and the way assessments are conceived and implemented—that provide the key to finding common ground between education and training and to defining what makes up a set of skills relevant to the market place.

The book's final message is perhaps its most profound one. Occupational delimitation and certification affects what individuals learn and what they do, as well as what they will be able to learn and do in the future. The demolition of old barriers between education and training open up the possibilities for learning and doing. By the same token, what were once purely pragmatic training decisions now hinge upon central educational concerns. The last chapter by J. Marquand reminds the reader of important ethical considerations related to occupational standards and certification and introduces an empirical and conceptual framework for addressing them.

Part I - International Perspectives

Chapter 1

Occupational Standards and Certification: Past-Current-Future Trends in the United States

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Introduction

Occupational standards and certification can be discussed as a means of emphasizing that quality of performance is the critical factor in education and training for work in our world of the 1990's. What workers around the globe can do at particular levels of excellence with the resources available will ultimately determine the standard of living for all of us as global citizens. However, it should be stressed that the setting of occupational standards and the implementation of certification processes must be recognized as so inextricably linked to the education and training system and to the business and industry of the economy they support as to be difficult to discuss alone without giving an erroneous impression about how they work within the complexity of the system and economy they support. A key that matches a lock within a set standard will turn the lock's tumblers so that the door is ready to be opened. Yet much that happens depends on the conditions of the door, the lock and the key as well as the motivation and other characteristics of the person poised to turn the handle and push the door. The context of each system component matters.

Therefore, in viewing the current stage of development in occupational standards and certification in the United States, it is necessary to discuss 1) the broader context of the U.S. history and cultural heritage, 2) the considerable technical advancements in the field over the past 20 years, and 3) the current political environment and concern over international trade and productivity for now and the next century.

Furthermore, we are examining "work," which is itself a complex interplay between types of skills and related activities that defy easy definition and compartmentalization, but that must be discussed for clarity of communication and progress in the system. These include 1) occupational skills (e.g., weld a joint, fix an automatic transmission, take a pulse), 2) basic or general education skills (e.g., applications of math, science, reading), and 3) general employability skills (e.g., get along with co-workers, utilize safe working practices). Over the course of this century in the U.S., there have been varying degrees of emphasis on one or another of these types of skills. One of the joys of living in today's world is that we seem to have a deeper understanding of the rich interrelationship between them and of how we might enhance them all together.

Factors that Affect Developments in the Field

Although the U.S. situation is depicted, each country has its own heritage to recognize and account for. The U.S. situation is characterized by heterogeneity and individual choice. The country was formed by European immigrants who themselves came from a number of countries; the influx has only broadened over time as major waves of immigrants from other continents, most recently from Southeast Asia, have chosen to move here. These people brought not only diversity of work styles and standards, but also independence, many of them leaving their country of origin to escape national rules and regulations. Thus it is not surprising that both individuals and institutions have tended to resist national, and in many cases, state standards, and that the form of government that proved viable is democratic and decentralized, with an emphasis on state and local rights and responsibilities. Likewise, the education and training system reflects these characteristics, and while some might view this as fragmented and lacking in cohesion, it has proven relatively resilient for the variety of demands placed on it.

The emphasis on a market economy and lack of regulation on the economy and private sector has placed responsibility on the individual which, in turn, has created an environment fostering development of flexible work rules and standards relevant and practically applied to a local environment. A contributing factor is certainly the size of the country, given that a welder in a small remote village in Alaska has very different demands and working conditions than a shipyard welder in Virginia or a steel worker in an automated urban factory. Any efforts to mandate national standards have, naturally, not survived; one of the strengths of the system has been its specific applicability.

Developments Over the Past Twenty Years

The U.S. heritage and history have yielded its consistent thrust toward voluntary adoption of standards achieved by consensus and toward guidelines rather than regulations. Major initiatives have continued to move toward a systematic, if not a centralized or standardized, approach.

Occupational Skills

Over the years, numerous certification programs (at last count, about 175), have been developed and implemented by national associations which administer elective tests of various types (among them, the well known CPA exam of the American Institute of Certified Public Accountants). Some occupations can be practiced in many states only after licensure for meeting certification standards; among these are law and cosmetology. In a few cases, Federal standards do pertain, as with air traffic controllers, who are subject to the Federal Aviation Administration. As can be surmised, more control has tended to be exercised where public safety has been perceived to be at stake.

Occupational standards that are designed less explicitly for safety and more to foster quality, productivity, and linkages of business and industry to the education and training system have developed more slowly and have been more decentralized. Extensive work was done during and after World War II by the military, which maintains systematic rating systems and which initiated the instructional systems design (ISD) process that tied the systems to training. Significant work has been done by individuals (e.g. James Crystal, James Greenan) to identify common skills among jobs for curriculum purposes or to assist dislocated workers. And states such as Ohio, Oklahoma, and Oregon were identifying skills standards in the 1970s and 80s. Some of these efforts folded in with extensive career education systems that depended on similar analysis and that led to Federally-financed cluster projects to provide information for groupings of occupations such as those transportation or in health and welfare. Also local initiative, along with an awareness of common needs, gave rise to major consortium efforts that continue today, such as the Vocational-Technical Education Consortium of States (V-TECS), currently composed of 23 state departments of vocational and/or technical education and six federal agencies, and the National Occupational Competency Testing Institute (NOCTI), both of which have linked their standards work to development of test banks.

Early industry-based initiatives that have been both national in scope and in influence on entry and advancement in jobs are those by the American Welding Society and the National Institute for Automotive Service Excellence (ASE). The latter began certifying auto mechanics in 1972 to improve worker competency. ASE currently certifies individuals in 24 different exam areas, plus it certifies training programs in eight major areas after rigorous evaluation, so that there is a piggyback effect of certification of both individuals and programs.

Basic or General Skills

In the 1970s and early 1980s, against the backdrop of growing international competition and an insistent need for military preparedness, education in the U.S. came under fire from a variety of sources, especially national commissions whose reports urged that an excellence movement be launched. Excellence was essentially equated with higher standards in the general academic program delivered in longer school days, weeks, and years in the hope of reversing declining college entrance aptitude test scores and a lower relative standing among industrialized nations. Concern was expressed over high dropout rates and illiteracy among school leavers, and the reports called for increased access to "excellent" education for the underserved minority, female, and otherwise disadvantaged learners, but the reform effort failed to deliver adequately in this respect. Although the nature of the prescribed reforms was not suited to the needs, interests, abilities or future schooling prospects of all students, this movement did serve to highlight the importance of core academic skills in a rapidly changing world.

By the mid 1980s, even more dramatic shifts in the work world had clarified the need to prepare the workers of the future very differently from those of the past, with a focus on greater flexibility. It was becoming clear that the jobs of the future would demand higher levels of basic skills in communication, math, and science, and that low skill jobs were declining rapidly. Furthermore, studies in cognitive science were pointing to the viability of learning in an applications context. Issues of providing a balance of academic and technical education to better meet the demands of the workplace and to better engage reluctant learners and "the forgotten half" were addressed by the Center on Education and Training for Employment at The Ohio State University in research syntheses—*Bridging Vocational and Academic Skills* and *The Dropout Prevention Series* on which much technical assistance was based. A mandate to address these issues was enacted into law with the 1991 Perkins II Federal legislation for Vocational and Applied Technology Education. It was this legislation that also incorporated performance standards as an accountability tool, to be discussed subsequently.

General Employability Skills

The driving forces, including growing concern about dropouts and inability of youth to undertake active job search and function effectively on the job, pointed to a need to help people behave in ways employers would find suitable for their workplace, including such skills as accepting responsibility and cooperating with others. These concerns were greatly exacerbated by the significant demographic shift of the U.S. population and its implications for the workplace.

Because of slow population growth, employers now and into the next century will draw from a smaller pool of potential workers. They are finding that many of these applicants have inadequate job competencies just at the time they need a broader range of competencies than ever before. The U.S. Department of Labor projects that, by the year 2000, 75 percent of entrants to the workforce will be women and minorities, many of whom are immigrants and many of whom have received less schooling than the traditional white male worker.

The Necessary Mix of Skills in a Competency-Based Environment

Over the past twenty years a persistent trend has grown that may be likened to a quiet educational revolution and that makes it possible for occupational standards and certifications to be placed with a consistent theoretical framework. That trend is toward competency-based education rather than the traditional content-focused and time-based approaches, and it has particularly gained ground with regard to workforce education and training. In a competency-based system, what the learner should be able to do (a set of competencies) is carefully identified, verified by experts (business and industry in most cases), and made public in advance, as are the criteria (observable and measurable) to be used in assessing achievement and the conditions under which achievement will be assessed. The learners' knowledge and attitudinal behaviors are taken into account, but actual performance of the competency is taken as the primary source of evidence.

A competency-based approach is nicely consistent with the findings of teaching and learning research, in that education and training programs using this approach can be readily paced for the individual rather than a group in lockstep. Maximum responsibility is placed with the learner, whose progress toward meeting competency standards is facilitated by an instructor who provides opportunities for development and practice of skills with realistic (or authentic) problems and situations, which may be of a team or cooperative nature. Such programs are quite flexible and amenable to change as well as accessible to people with different learning styles. They can and do incorporate a mix of occupational skills, basic or general skills, and employability skills.

A series of reports has been effective in drawing the strands of the workforce preparation perspectives together. These have included

- *Investing in People: A Strategy to Address America's Workforce Crisis* (Commission on Workforce Quality and Labor Market Efficiency 1989)
- *America's Choice: High Skills or Low Wages!* (Commission on the Skills of the American Workforce 1990)
- *What Work Requires of Schools* (Secretary's Commission on Achieving Necessary Skills [SCANS] 1991).
- *America 2000 Goals* (National Education Goals Panel 1991)

Investing in People, the earliest report, set the stage by making recommendations (44) on ways to increase the excellence of the U.S. work force. It signaled a need for coordinated action, which may have paved the way for *America's Choice*, for which the Commission had broad-based representation from government, business, and education. *America's Choice* was stronger in stating the urgency of need, and one of its main contributions was the clarity of the question—High skills or low wages? The SCANS report followed through on specifying the skills needs inherent in making a "high skills" choice.

One of the great contributions of the SCANS report was clear communication from an empirical basis of the need for occupational, basic, and employability skills along with reasoning, thinking, and learning to learn. A variety of similar theoretical frameworks of skills categories had been advanced (by states and others such as the American Society for Training and Development and the National Academy of Science), and these may have prepared the field, but the SCANS report gained a broad visibility and acceptance as a platform from which to move. A long-standing communication gap between education and employers stemming partly from the lack of common language had been narrowed somewhat.

Current Initiatives

The United States seems finally to be poised for coordinated and incisive action to deal creatively with the constant dynamic state of transition that the 21st century workplace promises to offer in continuing challenges. The Clinton Administration has demonstrated a firm commitment to human resources development. The passage at the end of March of the Goals 2000 legislation signals a ratification of the "High Skills" choice and implants development and use of performance measures and standards in the system. Although some of the goals lack operational definition as yet, including the goal specifying that "all adults will possess the knowledge/skills needed to compete in a global economy," the direction has been established. Indeed, this statement signifies explicitly that an important purpose of education for all is preparation for work, previously a point of contention.

Although the world environment is increasingly competitive, there is also evidence via the North American Free Trade Agreement (NAFTA), the European Community (EC), and the General Agreement on Tariffs and Trade (GATT), that cooperation and collaboration are not antithetical concepts to competition. The swift adoption of ISO 9000 standards for quality documentation gives evidence that cooperation can occur on international standards that can provide further integration of the world community.

Current initiatives continue to address and integrate development of occupational, basic, and employability skills in an outcome-based approach that relates a standard to the desired outcome and provides for realistic flexibility in how the outcome is achieved. In this way, occupational standards are the accountability tool that can drive a very adaptable system and keep it on target. This approach fits well with the U.S. decentralized philosophy and the desire to make adaptations for particular needs. It also allows for education and training to take place in a variety of settings, including school and work. And it provides an avenue to deal in specialized ways with not only labor market outcomes and learning outcomes, but also access outcomes in response to demographic shifts. Women and minorities are the fastest growing segments of the workforce, and the number of older Americans has also been increasing, while the 16-24-year-old segment has been decreasing. Flexible staffing options are being incorporated as companies recognize that to recruit and retain a quality workforce requires adapting jobs for different kinds of people than they have been accustomed to. A standards-based system is not derailed by the push toward redesigning jobs, a push which is also fueled by broader economic and competitive pressures and the need to contain costs. The use of temporary employees, independent contractors, outsourcing, job sharing, flextime and work-at-home options are examples of such redesign.

These and other basic structural changes in the workplace (such as moving to a less hierarchical company structure, corporate and military downsizing and reassignment of functions) have also displaced large numbers and new groups of workers, including those in white-collar occupations. Labor mobility and the need for transportable credentials have thus been heightened. Entrepreneurship has emerged as a strong alternative to corporate work, and indeed small and medium-sized companies are providing the largest number of new jobs in the economy. These companies can benefit from well-understood credentials as they work to gain a place in the market.

Restructuring of workplaces and redesigning of occupations in response to technological as well as organizational change will continue. It is, therefore, essential that any standards and certification process be amenable to change. This issue has amplified importance in terms of some of the obstacles to development of certification systems that have been cited. These include the fact that they take a number of years to develop (2-7 years according to the General Accounting Office, 1993), and an additional several years to gain credibility and acceptance, all of which is costly. Perceived benefits such as enhancement of workers' skills and transferability of skills, assistance in finding qualified workers, and improvement in curricula for training and retraining programs all depend on an up-to-date system that pays for itself. Further, the decisions on some of the training program improvements tend to be made with some lag, so it is imperative that the foundation for those decisions not be obsolete. Industry, rather than government ownership and control of the system, is viewed as a critical feature in terms of motivation to ensure that it stays up to date.

Government Plus Stakeholders

The government does not have to control the system to play an important role. In the United States, the government has helped to bridge a major obstacle, namely the inability to involve all stakeholders (employers, employees, and educators) previously, in spite of the fact that the three-way collaboration is judged to be critical to program success. The U.S. Departments of Labor and Education are currently sponsoring grants to 22 major industries to develop national skill standards (occupational, basic, and employability) and link them to education and training. The industries and grantees are listed in Table 1. Applicants for these grants were required to involve business-labor-education stakeholders. Ideally, the government could also play a coordination role that would help standardize terminology and to share process insights across the groups. It is important to note that many of the grantees are existing grass roots consortia or trade associations that are continuing or deepening their work under Federal auspices.

Table 1: The National Skill Standards Projects

Industry	*Funded By*	*Grantee*
Agriscience/Biotechnology	Dept. of Ed.	National FAA Foundation
Air Conditioning, Refrigeration & Power	Dept. of Ed.	Southern Association of Colleges and Schools, VTECS
Automotive, Autobody & Truck Technicians	Dept. of Ed.	National Automotive Technical Education Foundation
Biotechnical Sciences	Dept. of Ed.	Education Development Center
Chemical Process Industries	Dept. of Ed.	American Chemistry Society
Computer Aided Drafting	Dept. of Ed.	Foundation for Industrial Modernization
Electronics	Dept. of Ed.	Electronics Industries Association
Food Marketing Industry	Dept. of Ed.	National Grocers Association
Forest/Wood Products	Dept. of Ed.	Production and Manufacturing Foundation for Industrial Modernization
Hazardous Material Management Technician	Dept. of Ed.	CORD
Health Science and Technology	Dept. of Ed.	Far West Laboratory
Heavy Highway/ Utility Construction	Dept. of Ed.	Laborers—AGC Ed. & Training Fund
Human Services Education	Dept. of Ed.	Human Services Research Institute/EDC
Phototonics Technicians	Dept. of Ed.	CORD
Printing	Dept. of Ed.	The Graphics Arts Technical Foundation
Welding Occupations	Dept. of Ed.	American Welding Society
Electronics	Dept. of Labor	American Electronics Association
Electrical Construction	Dept. of Labor	National Electrical Contractors
Industrial Launderers	Dept. of Labor	Institute of Industrial Launderers
Metalworking	Dept. of Labor	National Tool and Machining Association
Retail Trade	Dept. of Labor	National Retail Foundation
Tourism, Travel and Hospitality	Dept. of Labor	Council on Hotel, Restaurant and Institutional Education

Source: *Vocational Education Journal*, January 1994.

Many Federal assistance efforts are coming with a cost-share price tag that helps to ensure a real commitment by those who participate. Actually, sharing of costs has been prevalent in development of privately financed systems as well, where consortium efforts are common. Participants can retain independent choice and yet spread the costs and gain in synergy and breadth of applicability. Some initiatives have been the result of local or state financed effort. For example, the Ohio Department of Education has sponsored Ohio Competency Analysis Profiles (OCAPs) that have been coordinated by the Center on Education and Training for Employment and developed by consensus of business across the state for forty key occupations. These link occupational competencies to basic and employability skills which are, in turn, linked to an assessment system. The profiles are used statewide as a foundation for program improvement. The process just described is typical of the sequencing that is deemed logical for U.S. systems: occupational analysis, verification, development of measures (often including test banks), the establishment of standards or desired levels of performance, development of education and training programs, implementation of program standards and, hopefully, program improvement. VTECS and NOCTI, previously mentioned, are engaged in this work as well, with their operations financed by consortia of participants.

Quality Improvement

The use of performance standards as a quality improvement tool fits integrally with the total quality management (TQM) concept, which is based on the theories of W. Edwards Deming, Joseph Juran, Philip Crosby and others and which has swept U.S. business and education. The basic idea is to establish standards and procedures that guarantee the quality of an organization's products through continuous monitoring rather than through one final inspection. It relies on the expertise and commitments of all members of an organization through participatory management that involves input, problem solving, decision making, and continued learning to learn.

Because these critical thinking activities also tally with our best understanding of the elements of effective teaching and learning, we are finding a most promising convergence that contributes to the viability of business-education partnerships as never before.

Critical Interrelated Federal Legislative Initiatives

It is generally agreed that real progress in helping people meet meaningful standards rests in a true collaboration between education and business and industry. Given a history of their seeming inability to communicate or even speak the same language, real strides have been taken recently. The Federal government is nurturing the relationship and has capitalized on it in important initiatives such as establishment of a National Skill Standards Board. The Board is to help business, industry, educators, and other key groups develop and implement a national system of voluntary industry skill standards and certification that will have long-term viability. Provisions inherent in the Goals 2000 legislation, tech prep (which provides for articulation between secondary and postsecondary education and business and industry), and the School-to-Work Opportunities Act (which embodies coordinated school-based and work-based learning) are all related initiatives. All of these mandate cooperative involvement, and the systematic setting of desired outcomes is the linchpin on which they hinge. These desired outcomes involve occupational skills, basic skills, and employability skills in a mutual reinforcement that reflects the real and complex world. The strongest reason that can be advanced for why these initiatives are likely to work well is that they build realistically on existing state/consortia/industry efforts to build standards as opposed to starting something brand new or trying to enforce national standards which would not be accepted or workable in the U.S.

Summary

Finally, the United States seems to be poised for coordinated and incisive action to deal creatively with the constant dynamic state of transition that the 21st century workplace promises to offer in continuing challenges. The results of current significant initiatives will be positive to the degree that there is a sensible adherence to these principles:

- involvement and ownership for all stakeholders in a voluntary system of guidelines built on natural incentives rather than control mechanisms, as is consistent with the country's deeply valued independence and democratic choice
- recognition of the broad diversity that characterizes the nation
- purposeful and systematic reflection of dynamic complexity rather than unrealistic simplification that often seems attractive but is untenable in application.

As all those who have been involved in occupational standards (as well as related basic and employability standards) work are well aware, the essence is not in the setting of the standards but in their acceptance, their implementation, and their contribution to improvement in human resource development, which is the core of economic development. The occupational standards we have been discussing do not exist in an isolated sphere, but are integral to a holistic system that enhances economic development.

Although the world environment is increasingly competitive, and all countries are driving hard to gain or maintain their place in it, there is also evidence via the North American Free Trade Agreement (NAFTA), the European Community (EC), and the General Agreement on Tariff and Trade (GATT), that cooperation and collaboration are not antithetical concepts to competition. The swift adoption of ISO 9000 standards for quality documentation gives evidence that cooperation can occur on international standards that can provide further integration of the world community. The key is being placed in the lock. It will take concerted effort, working within our systems and contexts to swing open the doors of economic progress.

Chapter 2
The Delimitation and Certification of Occupations in Canada

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Summary

The creation of The Canadian Labour Force Development Board (CLFDB) and Provincial Training Boards in Ontario, New Brunswick, Newfoundland, British Columbia, Saskatchewan and Québec, plus the intention to create local training boards, has 'breathed new life' into the delimitation and certification of occupations in Canada. This paper will describe and analyse developments during the past five years at the federal level and in the Province of Ontario.

The creation of The Ontario Training and Adjustment Board (OTAB) at the Provincial level and the intention to create 25 local training boards has been elaborated by this writer. (Wilson, 1993) In addition, this writer produced the 'catalyst' study for the certification of Training-within-Industry (TWI) trainers for the (former) Ontario Training Corporation, which is currently being undertaken by The Ontario Society for Training and Development (OSTD). (Wilson, 1992)

This paper will relate the developments described in these precursor studies to current activities of the CLFDB and OTAB in the areas of occupational delimitation and certification. The renewal of "occupational profiles," the modernization and recasting of The Canadian Classification and Dictionary of Occupations (CCDO) as The National Occupational Classification (NOC), (National Occupational Classification, 1993) computerised HRD planning and occupational analysis, will also be detailed. Current initiatives by The CLFDB and OTAB to modernize occupational standards and certification mechanisms will be described and analyzed. The technological modernization and restructuring of the Canadian economy, labour market, and training infrastructure will be related to these developments and their effectiveness will be analysed.

Introduction

The delimitation and certification of occupations in Canada is currently being modernised, after decades of inattention and stagnation. The apparent catalyst for this modernization is the creation of the first national training board infrastructure in North America. This infrastructure currently comprises The Canadian Labour Force Development Board (CLFDB) at the federal level, provincial training boards in six of the ten Provinces (British Columbia, New Brunswick, Newfoundland, Ontario, Québec and Saskatchewan), plus local training boards affiliated with *both* provincial training boards *and* the CLFDB.

Chapter 2 - The Delimitation and Certification of Occupations in Canada

The CLFDB was established in 1991 as a quadripartite (government, employers, labour and education) organization responsible for labour force training. The CLFDB is under the aegis of Human Resource Development Canada (HRD Canada) [formerly known as Employment and Immigration Canada], the federal ministry of labour. Unlike national training boards in Germany (BIBB), Brazil (SENAI) and Singapore (VITB/ITB), the CLFDB has not been given responsibility for the delineation and certification of occupations. However, from 1993 the CLFDB has cooperated with HRD Canada and Statistics Canada in this important area. This cooperation has resulted in the new National Occupational Classification and the joint HRD Canada/CLFDB Sectoral Partnership Initiative, which has the development and implementation of occupational standards as one of its objectives. The development of occupational skills standards in 225 of the most critical occupations is currently being undertaken.

The Ontario Training and Adjustment Board (OTAB) is also becoming involved in sectoral training initiatives, including the delineation (and possible certification) of occupational standards, but at the time of writing the OTAB policy paper had not been released. OTAB enabling legislation received royal assent on the 21st July 1993 and has devoted its initial attention to the establishment of infrastructure and the amalgamation of 22 programmes and services from the Ontario Ministry of Education and Training, Ministry of Labour and Ministry of Citizenship. The enabling legislation states that OTAB objectives include:

> To participate in the development and promotion of common standards in occupational training, so as to enhance labour force mobility by making skills more portable. (Bill 96, 1993)

Status Quo Ante

Until the advent of the recent initiatives described above, the delimitation and certification of occupations in Canada was primarily undertaken at the provincial level, since these matters were considered to be under provincial jurisdiction as a component of the exclusive provincial responsibility for education. (Wilson, 1993) All provinces except Ontario have apprenticeship boards for the establishment, regulation and administration of apprenticeships in the certifiable trades. The successful completion of an apprenticeship follows passing the Certificate of Qualification examination with a grade of, at least, 65 percent. While *regulated occupations* with *voluntary certification* do not require certificates, in *regulated occupations* one is not allowed to work without possession of Certificates of Qualification and Apprenticeship. In Ontario, the Colleges of Applied Arts and Technology (CAATs) offer apprenticeship training in 43 regulated trade areas, as well as in 26 non-regulated occupations.

In 1959, the Interprovincial Standards Programme (ISP) established the "Red Seal" trades programme to test and certify designated critical skill trades, in order to facilitate labour mobility between provinces. This programme comprises 28 of the 170 apprenticeable trades in Canada and approximately 70 percent of all apprentices are in Red Seal trades. (Wilson, 1993) Apprentices must first hold (or be qualified to hold) a provincial Certificate of Qualification in order to be eligible to write a Red Seal examination. A grade above 69 percent entitles the apprentice to the ISP Red Seal, which permits the practise of that occupation across Canada without further examination. The examinations are developed by the Interprovincial Standards Programme Co-ordinating Committee comprised of Directors of Apprenticeship from each province and territory and two representatives of HRD Canada. The examinations are revised every two years and each province involved with that trade must unanimously accept the examination. (Wilson, 1993)

Canada's New Economic Realities

Canada remains among the ten largest industrial economies in the world and is a major trading nation. However, Canada has historically relied upon the export of basic resources: minerals, timber, agricultural produce and fish. This resource-dependency generated a high standard of living but during the past three decades these basic commodities have been produced more competitively by dozens of other nations, leading to weakened demand for Canadian resources. Canada exports about 25 percent of its Gross National Product and has out-performed other OECD countries economically since 1983, albeit at a lower rate of growth during the 1989/1993 recession/ depression. Due to its proximity, Canada's major trading partner has historically been the U.S.A., to which about 75 percent of its exports are destined, amounting to $200 billion per year.

The magnitude of Canadian trade with the U.S.A. led to the negotiation of the Canada-US Free Trade Agreement (FTA) in 1990, and subsequently to the North American Free Trade Agreement (NAFTA) between Canada, Mexico and the U.S.A. in 1993. Earlier initiatives included the Trudeau-era attempts to increase trade with Europe in the 1970s and the Pacific Rim trade initiatives that have paralleled the FTA and NAFTA. The success of these initiatives has been "mixed," at best, although it is difficult to determine cause-and-effect because of the impact of the 1989-1993 recession/ depression. Canada has lost about 260,000 jobs since the advent of the FTA and NAFTA, with 150,000 of those jobs lost in the manufacturing sector.

Global trends which have engendered a new economic reality for Canada include the export of unskilled and semi-skilled jobs from our high-labour-cost economy to low-labour-cost nations; technological modernisation of the productive sectors; and the rapid growth of employment in the service sectors, coupled with the slow decline of productive sector employment. These trends have precipitated the technological modernisation of the manufacturing and other productive sectors, including *both* the replacement of some workers with robotic equipment *and* the increased demand for educational attainment and training necessary to understand, operate, maintain and repair such equipment. In addition, the export of jobs to newly-industrialising (NIC) and least developed (LDC) nations has motivated Canada to reform its education and training infrastructures in order to train — and in most cases **re-train** — the higher skilled workers demanded by the increasingly knowledge-intensive labour market. (Wilson, 1994)

Examination of current trends in job creation indicates that between 60 and 75 percent of jobs created during the past decade have been in the service and informatics sectors, while jobs in the "traditional" manufacturing, mining, forestry, fishing and agricultural sectors have been in net decline. In 1990, the manufacturing sector incurred an annual decline of 5.4 percent. (Schnippering, 1991). Another salient—and disturbing—trend has been the increasing shift from permanent full-time to a variety of part-time employment positions, including the phenomenon of "contracting out" previously full-time positions. Ironically, while 1.5 million Canadians, or 11.2 percent of the labour force, are unemployed, there are about 300,000 jobs which can *not* be filled each year because they are in high-skill, high-technology areas for which Canadians have not trained. Further, a Statistics Canada survey showed that 14 percent of Canadian manufacturers face production problems due to a lack of skilled labour.

On the positive side, Canadian performance in industrial restructuring and adjustment appears to have maintained our international competitiveness. While accounting for only two percent of global production, Canada accounts for 3.1 percent of world trade in goods and services. (Crane, 1994)

Another important trend that accompanies the modernisation of the workplace and is a concomitant of the introduction of robotic and computer-controlled production equipment is known as *cross-training*. This refers to the training of production workers in more than one field, or skill area. That is, in addition to training in the *mechanics* of industrial robots, computers, etc., workers must *also* be trained in the *electronic circuitry* of this equipment so that they can install, maintain *and* repair this sophisticated equipment. (Wilson, 1992)

These trends reflect the restructuring of the Canadian economy and the structure of the Canadian labour force, which has engendered the current reconsideration of occupational standards and certification. The realisation is that life-long learning, skill upgrading, the acquisition of new skills and broadening the range of existing skills underlies the motivation for reform of the Canadian education and training infrastructure, including the delimitation and certification of occupations.

Current Initiatives in Training and Occupational Analysis

Although the Canadian Labour Force Development Board (CLFDB) has no responsibility for trade testing and certification, one of the CLFDB roles is "the mobilisation of private sector efforts to modernize and put in place standards of skills for certification of occupational competence." The CLFDB is also empowered to "recommend standards for skills training and certification to promote access and portability." (Wilson, 1993) However, while assuming responsibility for the modernisation of occupational standards, the CLFDB has no intention at the present time to assume responsibility for certification.

In January 1993 the CLFDB "launched a national consultation on the subject of occupational standards with the publication of a discussion paper entitled *Occupational Standards in Canada — Issues and Opportunities.*" This publication was followed by a forum in June 1993 in which labour market partners discussed occupational and training standards. In March 1994 a Draft Discussion Paper entitled *Occupational Standards and Training Standards* was published. (Canadian Labour Force Development Board, 1994) It is noted that the CLFDB "intends to undertake further consultation and consideration prior to finalizing its position on training standards."

The Draft Discussion Paper indicates that the CLFDB does not intend to develop standards for *all* occupations, but rather to pursue a "wide scope" to ensure "that workers trained to the standard will have skills which are applicable and adaptable to a wider variety of work situations." A "narrow focus" on occupation-specific standards is noted to have the potential of reducing "the adaptability of the Canadian workforce." Therefore, the CLFDB focus is to "develop standards for sets of skills which are most important from a training outcome perspective and which best differentiate between ineffective and effective training." The focus is also knowledge-based in order to equip "workers to deal with a changing workplace." To accomplish this objective, "occupational standards should include mastery of bodies of relevant knowledge in addition to the measurable performance of tasks." (Canadian Labour Force Development Board, 1994)

These objectives indicate that new occupational and training standards are to be developed by means of both *sector* and *occupation-specific* approaches. "Occupation" has been defined as referring "to a cluster of skills and knowledge which is relatively common among a set of workers or workplaces." (Canadian Labour Force Development Board, 1994) The development of occupational standards has been undertaken by means of Sector Councils, e.g., in tourism and aviation maintenance. (Canadian Labour Force Development Board, 1994) This approach reflects the CLFDB aim of promoting and encouraging the development of occupational standards in concert with labour market partners without forcing standard-setting upon sectoral or occupational bodies that have not displayed a readiness to set standards. While the CLFDB recognizes that "some standard-setting bodies also certify workers, it is the [CLFDB] position that worker certification is not the main reason for the implementation of occupational standards." (Canadian Labour Force Development Board, 1994) However, while not coercing the universal adoption of occupational standards the CLFDB advocated prescribing standards "for the purchase of training with public funds . . . [as] one step in ensuring the training system responds to the needs of the labour market." (Canadian Labour Force Development Board, 1994

Occupational Stream	Current Lead Body
Occupation or skill sets specific to an industry	Sector Councils (with employer and worker representatives)
Apprenticeable trades	Provincial apprenticeship directors and trade advisory committees; Canadian Council of Directors of Apprenticeship
Professional and technical occupations	Professional and technical associations
Other occupations which cut across many industrial sectors	no clear lead
Generic skills for entry-level occupations	no clear lead

Current Roles and Responsibilities in Setting Standards

Sectoral Training Initiatives

The Sectoral Training Initiative began in the mid-1980s as yet another alternative to federal funding of training. This initiative is now being integrated into the CLFDB and provincial training board infrastructure in cooperation with Human Resource Development Canada. The central objective is to:

> create stronger sectoral partnerships among labour, management and governments to develop comprehensive human resource development strategies within the various Canadian industrial sectors by:
>
> (a) building a consensus among all labour market partners;
> (b) establishing a forum for co-operation;
> (c) *developing clear occupational/skill standards through an industry*: and
> (d) promoting high quality training and leading edge skills for workers. (McWhinnie, 1993)

Fifty-five industrial sectors, representing approximately 60 percent of the labour market, or about 8 million workers, will be covered by the Sectoral Training Initiatives $250 million funding package during the 1994-1999 period. (McWhinnie, 1993) The sectoral approach is relatively new, having been adopted from Europe. One pertinent example has been the sectoral approach in the French retail food sector undertaken by the Centre d'études et de recherches sûr les qualifications (CEREQ) and l'Agence nationale pour le developpement de l'éducation permanente (ADEP). (Bertrand, 1992)

The definition of a *sector* was based upon several decades of CEIC and Statistics Canada development of the Canadian Classification and Dictionary of Occupations (CCDO) [now renamed the National Occupational Classification (NOC)] and the Canadian Occupational Projection System (COPS). (Paterson, 1994) A sector comprises:

> a national group of companies, organizations, or workers which share some relevant combination of products, services, or technology which results in their having common human resource concerns. (McWhinnie, 1993)

The importance of this approach is that it signals a departure from federal focus upon industries, *per se*, and the recognition that employee knowledge, skills, competencies and standards are common to many enterprises, even if those enterprises are not in the same economic sector.

The key programme and funding components are:

1. Sectoral studies	100 percent HRDC
2. Sector council	100 percent HRDC - one-year development phase 90 percent HRDC/10 percent industry - first year 70 percent HRDC/30 percent industry - second year 50 percent HRDC/50 percent industry - third year
3. Occupational standards	50 percent HRDC/50 percent private sector
4. Skills upgrading	costs shared between HRDC and private sector. (McWhinnie, 1993)

To date, the Initiative has undertaken eleven (of the proposed 55) human resource sectoral studies and established twelve sectoral councils. The Automotive Parts Sectoral Training Council (APSTC) appears to be the most promising, since it is the only council that has opted to develop and deliver its own training instead of "purchasing" training from either public institutions or private consultants. (Paterson, 1994) The APSTC is also the only sectoral council to have taken the next step of certification. Among other sectoral councils are the National Tourism Human Resource Council, the Canadian Steel Trade and Employment Congress (Canadian Labour Force Development Board, 1994) and the Electrical and Electronics Industry Human Resource Council.

The APSTC is bi-partite in its structure at all levels with full support from both the Canadian Auto Workers and the Auto Parts Manufacturers Association (APMA). The Council Board of Directors is made up of four CAW nominees, four APMA nominees, and three *ex-officio* members; one federal government representative, one provincial government representative and one representative of the Ontario Colleges of Applied Arts and Technology (CAATs). (Canadian Labour Development Board, 1994)

The ASPTC has developed and is delivering a 120-hour training programme to production workers leading to the receipt of the "Auto Parts Certificate." Although only 13 of the 300-400 auto parts manufacturers presently participate (since many small enterprises are non-union), the three Council training sites have been operational since January, March and April 1994, respectively and the first phase of certificate training will be completed by the end of the year. (Canadian Labour Development Board, 1994) A formative evaluation of this innovative initiative is expected within the next few months.

National Occupational Classification

As noted earlier, the National Occupational Classification (NOC) replaced the Canadian Classification and Dictionary of Occupations (CCDO) and the related Standard Occupational Classification (SOC), developed in 1980 by Statistics Canada primarily for census purposes. The rigid CCDO focus upon occupations has shifted to a blend between occupations and specializations and job ranges. The NOC is noted to present:

> a new structure for analyzing and understanding the labour market and reflects occupational changes that have taken place over the past two decades.
>
> occupations that encompass a wide range of skill levels are not classified together in the same unit group as they are in the CCDO. (Human Resource Development, Canada)

The NOC is structured in the same three-tiered hierarchical arrangement as other classification systems, such as the ICDO and DOT, but has 26 *major groups*, 139 *minor groups* and 522 *unit groups* which classify approximately 25,000 occupational titles.

> some titles are clearly **occupations**, such as *librarian* and *chef*, while others are **specializations**, such as *music librarian* and *pastry chef*. Still others represent a **range of jobs**, such as *furniture assembler* and *sawmill machine operator*. (*Human* Resource Development, Canada)

In developing NOC classification criteria, *skill level* and *skill type* were the two major occupational attributes utilized, while factors such as *industry* and *occupational mobility* were also utilized. Skill level was defined as "the amount and type of education and training required to enter and perform the duties of an occupation" and skill levels were organized in four hierarchical categories and minor and unit groups were assigned to each skill level. (Human Resource Development, Canada) Skill type was defined as "the type of work performed" and conform to ten broad occupational categories according to "similarity ... [of] the educational field of study required for entry into an occupation," or "the industry of employment." (Human Resource Development, Canada)

Although not stated in the available NOC documentation, I believe that the system is based on a *competency-based* approach to occupational classification. If I am correct in this assumption, then this revised classification system will be capable of facilitating the development of *standards* which can then be instrumental in the development of *certification mechanisms.* This is the approach which I followed in my study of training-within-industry undertaken in 1992 for the former Ontario Training Corporation. (Wilson, 1992)

Conclusions

When I was initially asked to prepare this paper my first reaction was that few substantive changes had taken place in the delimitation and certification of occupations in Canada. In fact, published accounts of skill standards systems, such as Wills (1992), continued to describe the previous system, noted in my *status quo ante* section. However, I was pleased to discover that a number of the significant developments described in this paper had recently taken place. Therefore, at least on paper, the status of occupational delimitation has changed significantly in Canada.

However, the status of certification remains uncertain, since the CLFDB documentation indicates that they do not intend at the present time to proceed to certification. This leaves the Interprovincial Standards, or "Red Seal," Programme as the only federally-sanctioned certification process. The "action" in occupational certification appears to remain with professional associations and one Sectoral Training Initiative, the Automotive Parts Sectoral Training Council (APSTC). I am particularly pleased that my efforts for The Ontario Training Corporation have been the catalyst for The Ontario Society for Training and Development (OSTD) to initiate a certification process for trainers-within-industry. I understand that similar initiatives have been taken by organisations of HRD professionals, also in Ontario.

While the new NOC lists about 25,000 occupational titles, the CLFDB and Sectoral Training Initiatives of HRD Canada are engaged in the development of standards in *only* 225 "critical occupations;" this is less than ten percent of the total! At least, these standards development initiatives are based upon *sets of skills,* rather than upon occupational sector skills and occupation-specific skills. This appears to be a step in the right direction, particularly if my assumption that a competency-based approach underlies these current developments is correct.

Probably the most interesting aspect of the new Canadian occupational classification infrastructure, including training boards, sectoral initiatives, and a new classification system, is that for the first time we have created a hierarchy of structures which should facilitate communication between levels of government, deliverers and "consumers" of education/training. We can only hope that this reform will make a difference.

Another problem that I see with the current evolution of Canadian training boards and sectoral initiatives lies in the very nature of business participation. It is questionable whether business will continue to support the Sectoral Initiatives once federal funding ceases.

While the current Canadian occupational classification reform is just beginning, it can be observed that the reform is structural and regulatory in its orientation. The reform also appears to be focused upon the reorientation of goals and objectives, changing the policy-making and administrative power structures, the financing mechanisms, and the relationships between institutions delivering training and the "consumers" of training in the extractive, productive, service and informatics sectors of our economy. Even though it is unstated, I believe that another goal is to foster the creation of a "training culture" in Canada — similar to those found in Germany, Sweden, Japan and Singapore. The federal and provincial focus upon sectoral training appears intended to create constituencies favourable to the institutionalisation of training as a "normal" attribute in the workplace.

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Chapter 3

Industrial Certification: Lessons from Europe

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This outline paper is concerned with changes in approaches to occupational certification and standards in Britain, France and Germany, and the training and qualification responses being introduced due to economic and technological developments, which demand an increasingly well educated and trained labour force.

Due to the wide ranging nature of the topic it has been decided to restrict the work to the engineering-manufacturing industry, since this is the sector most dramatically affected by advances in technology, particularly during the past decade.

In the British engineering industry the advent of the silicon chip transformed the technology foundations, as it did in all countries, plastics in production processes played an increasing role, computer aided design and manufacturing programming became widespread and all these developments led to significant changes in the structure of the labour force, with fewer but more highly qualified personnel carrying out a larger range of tasks than hitherto. In the British engineering industry the total of corporate and incorporated engineers doubled, whilst the total labour force dropped by almost fifty percent.

The downward trend in employment of craftsmen continued but the engineering industry reported small increases in the employment of people in managerial, professional and administrative grades. Other areas of employment increases were in office and data processing equipment, industrial plant and steel work, and the aerospace sectors.

Current occupational classifications in the British engineering industry come under seven headings as follows:

Engineering Managers — People with management responsibilities who use engineering skills in the course of their work. Titles could be Factory Manager, Production Manager, or Development Manager.

Other Managers — Those with similar status to Engineering Managers, including Accounts, Personnel, Administration and Directors with no engineering role.

Professional Engineers, Scientists and Technologies — includes all Professional Engineers, Scientists, and Technologists and others.

Engineering Supervisors — These might have the title of Foreman/Forewoman, Charge hand, Team Leader, etc., and their work will have a supervisory and engineering element to it.

Technician engineers — This is an intermediate grade between craftsman/craftswoman and professional engineers. Such people may be employed in research and development, design, production processes, testing or engineering maintenance work.

Craftsman/Craftswoman — People usually having completed an apprenticeship or similar recognized training courses that enable them to carry out their work to a high level of competence.

Operators and Assemblers — Those, including machinists, who use some engineering skills in their work somewhat below the level of a skilled craftsman/craftswoman.

In most cases the range of work carried out by individuals has increased due to technological change, with some of the functions and responsibilities previously the role of managers and supervisors being passed further down the line in, for example, the planning and supervision of the work and quality control.

To keep pace with the technological and economic changes taking place in the British engineering industry the statutory Engineering Industry Training Board, which was replaced by the Engineering Training Authority in 1991, carried out regular surveys to determine the changes in occupational categories and spent a great deal of time and money developing training and qualification programmes to meet the momentous changes transforming the industry, and the ever pressing demand for a more highly qualified work force. The surveys showed continuing demand for graduate engineers and highlighted serious high level skills shortages.

Much of the necessary training to meet the needs of most categories of people engaged in the engineering industry was delivered at the Engineering Industry Training Broad's own training facilities, ranging from senior management to apprenticeship programmes.

In a move to raise standards of vocational preparation in general to meet the challenges of the technological and economic changes taking place, and to bring uniformity to a vast range of qualifications awarded by a large number of bodies, the British Government set up the National Council for Vocational Qualifications to plan, implement and supervise far reaching changes in the content, presentation and standards of qualification in a large range of vocational and related subjects.

The National Council for Vocational Qualifications endorses vocational qualifications awarded by Industry Lead Bodies, for example the Engineering Training Authority, provided that the course contents and examination standards meet the Council's criteria for the various levels concerned. The qualifications are based on standards developed by industry and commerce and are highly relevant to the work situation.

Engineering trainees, below University level, can take courses in Engineering Assembly, Engineering Construction, Electronic Product Assembly, Engineering Machining, Engineering Finishing, Engineering Maintenance, Engineering Manufacturing and Testing to name only a few of the over thirty-five subject headings. All the programmes have been proposed and implemented by the

Industry Lead Bodies in direct response to the rapidly changing situation faced by their constituent companies, due to the technological and economic changes taking place.

The rapid decline of the engineering/manufacturing base, at least so far as lower skilled employment is concerned, has been accompanied by a huge increase in service sector employment that raises many questions on the changing class, gender and spatial divisions of labour in Britain. The National Council for Vocational Qualifications is also very active in the promotion of quality training for many areas of employment in the service sector, helping to meet the demands for skills in this rapid growth area.

In Germany, the metal engineering sector was the largest sector in the former Western part of the country. There were thirty-seven trainee occupational classifications up until the late 1980's, but after research work and consultation with various bodies, it was decided that the occupational classifications could be reduced to six, five of which were divided into sixteen specializations. The apprenticeship period was extended from three to three and a half years to take the changes into account.

Trainees in all six main new occupations have a common training programme in the first year. In the first half of the second year the occupations of industrial mechanic and tool mechanic, as well as construction mechanic and plan mechanic continue to be taught under identical syllabi. In the third year the training is separate for the sixteen specializations.

The comprehensive streamlining of training syllabi and occupational profiles, which was the main achievement of the new training regulations, was to enhance worker flexibility and the ability of the workforce to assimilate technological developments. By extending the range of skills in the individual occupations, the new training scheme makes for broader and more and more flexible definitions. Creating a broad common skill base makes it easier for manpower to move from one occupation to another, and enables them to better understand what other workers are doing and thus function more effectively in a self-regulating, horizontally co-operative, decentralized work organization.

The new German initiative was very important because it was the first time that a very large number of trades in one sector of the economy had been reorganized over the entire field, in response to technological change.

Changes in classifications and training and qualification content were agreed in close co-operation with Employer and Employee organizations, together with representatives of the respective education and training authorities, in a well-established procedure, based on observation of changes taking place in working requirements, and the apparent need for a better trained and flexible labour force.

The changes in industrial metal working occupations were the result of eight year's research, discussion and negotiation with all interested parties, aided by the Federal Institute for Vocational Training (BIBB), which did most of the research for the project and steered it through the complex procedure of consultation with the Ministries of Education of the then eleven Laender, since these are responsible for providing supplementary instruction for trainees.

During the project the Federal Institute for Vocational Training asked 180 experts to evaluate 358 elements of the syllabi for the then 37 trainee occupations in industrial metal working. The elements were classified in six sectors, manufacturing , assembly, testing, drawing, materials and other. Each element was evaluated according to 14 criteria, for example, its relative importance for the performance of the respective occupation. The information gathered, consisting of 200,000 data units, was analyzed using advanced statistical methods (discriminant and cluster analysis) to establish similarities, identify overlapping between individual occupations and to develop future training courses, including the definition of the subjects to be studied.

As a result of the changes to the classification system all the occupational designations for those qualifying under this system in the six industrial metal working occupations will end with the word "mechanic." (New Industrial Metalworking Occupations, Berlin)

In the United Kingdom the introduction of the National Council for Vocational Qualifications is an attempt to remedy long-standing weaknesses in the British system of training and qualification, and introduce nationally agreed standards of attainment for a wide range of trades and occupations previously accredited by a large number of examining bodies. Lack of any type of formal training and qualification was characteristic for large sections of the work force, and regarded as a major disadvantage for British competitiveness. The setting up of the Council was seen as a way to emulate practice in some Continental countries, particularly Germany.

National Vocational Qualifications are qualifications about work and are based on standards developed by industry and commerce. They are designed to give people better access to the opportunities offered by obtaining training and qualifications. The NVQ system is supported by employers and trade unions, as well as national examining bodies such as the City and Guilds of London Institute, the Business and Technology Education Council and the Royal Society of Arts.

Each NVQ is made up of a number of separate units which set out exactly what the candidate must be able to do, and to what standard. The Units are like mini-qualifications which can be accumulated towards a full qualification. In other words the candidate obtains recognition and credits for every stage of the learning process successfully completed.

NVQ's are based on standards that spell out the broad skills required in a particular field of employment, and the standards and learning contents are set by Industry Lead Bodies including representatives of employers, trade unions and professional bodies, supported by the Employment Department.

The standards are then packaged by the awarding bodies, such as those mentioned above, and brought to the National Council for Vocational Qualifications that decides whether they follow the rules set out in the NVQ Criteria. If they do, the NCVQ approves the award which then becomes an NVQ and part of the NVQ Framework.

Schools and colleges offering, for example, Business and Technology Education Council courses and qualifications adjust course content to meet new NVQ requirements, as and when necessary, but the award of a NVQ does not necessarily require formal attendance at School or College as the preparation and assessment can take place at work where there are approved facilities. This approval would normally be carried out by a local Training and Enterprise Council, TEC, which are the local experts on NVQ requirements.

The main headings for the NVQ framework classification result from the functional analysis of work roles, and provide the initial organizing structure for competence based qualifications. In this approach to determining training and qualification content for specific jobs there are similarities to the work carried out under the supervision of the German Federal Institute for Vocational Training in respect of the metalworking occupations.

Finally, the NCVQ has established a National Database of Vocational Qualifications which is the memory of the NVQ Framework. It is the most authoritative and up-to-date source of information for vocational qualifications that has ever existed in the United Kingdom. The data shows what NVQs and other major qualifications are available, what units are required and how each unit is made up. (National Council for Vocational Qualifications, 1993-4)

There is no evidence to suggest, however, that changes in course and examination results and diplomas are leading to significant alterations to occupational classifications in Britain. Job content and methods are changing as a result of technological developments, with increasing demands for numeracy and computer literacy forming essential core skills for an increasing range of occupations, especially in manufacturing industries.

In France, by contrast, there is a close link between diplomas, qualifications and remuneration, according to an OECD report by Danielle Colardyn. The report states that more than in any other country the job hierarchy is determined by the classification and level of diplomas, but over the past ten years there has been a marked change in the importance placed on diplomas, under the combined effect of economic restructuring, changes in work patterns and new technologies.

The report continues with the view that the increase in continuing adult education has accelerated the decline of the diploma as the sole benchmark in terms of qualifications. The diploma is still confined to the sphere of formal education and is not an accurate measure of the full range of an individual's personal and professional competence. The concept of "training investment" reflects the increasing emphasis placed by employers on continuing education and training as part of the long-term human resource planning.

The introduction of the Baccalaureate Professional (Level IV) is an important step towards raising the levels of professional competencies and the introduction of a credits system will allow adults to gain points for attending continuing training courses.

The accreditation by the Commission d'Homologation des Titres et Diplomes of any course is based on consideration of the quantitative and qualitative information concerning the trends taking place in the sector of business or industry in question. In other words the structure and content of the training, together with the type of work to be carried out by the individuals who have received it, are taken into account.

In recent years the approach of gearing diploma specification to the job specification has been increasingly adopted and introduced as part of the reform of initial education diplomas, and is now in widespread use throughout France.

Certification policy is changing as the result of the aim to bring eighty percent of students in the same age group up to the level of Baccalaureate (Level 4). All the social partners in France are agreed on the need to raise the level of qualification of the labour force and experiments are being carried out to find ways of determining and certificating the personal and occupational skills acquired by those sections of the population with few or no formal qualifications. (Colardyn, 1990)

In France, as in other countries, the creation of a new qualification is preceded by extensive consultations with the social partners according to the type of occupations and sectors for which the preparation is envisaged. The groups to be consulted vary according to which Ministry is concerned with the creation of the new qualifications, for example, the Ministry of National Education, Agriculture or Labour, Councils or Specialised Commissions of other Ministries.

The Commissions Professionnelles Consultatives (CPC) have a general competence for the drawing up of technological and professional diplomas and serve as an obligatory point of consultation for the social partners involved in the subject matter. The CPC's are quadripartite in composition and bring together an equal number of employers, employees and representatives of public authorities and leading personalities well qualified and experienced in the qualification area to be considered.

The work of preparation of a diploma by the CPC consists of four phases:

1. A first feasibility work is undertaken to see if the nature of the diploma responds the most precisely to the demand for its creation, based on the analysis of the situation of the labour market. This demand can also come from the educational system itself as well as from exterior bodies such as the professions or from the enterprises concerned.
2. The creation of job descriptions based on a prospective analysis, of five or ten years, concerning the main activities covering the jobs likely to be occupied by future holders of the diploma.
3. The making up of the description of the diploma, consisting of a translation of the analysis of professional activities in terms of the competencies to be acquired, the knowledge and the application of the knowledge.
4. The choice of the methods of validation, and the setting up of the regulatory system for the diploma. This is conducted under the responsibility of the services of the minister charged with its implementation.

So far as standards and examinations are concerned the system consists of Jurys which are paritair and composed of representatives of the administration, the professionals of the sector involved, the employers and perhaps the educational institutions. The Jurys are designated by the prefects of the region, the rector of the academy or by the regional director of the ministry concerned. Under the ministry of National education programmes the validation is placed under the authority of the rector of the academy. Whatever the level of education or diploma prepared for the principle of the composition of the Jury is that the candidates are not examined by their own teachers. (Centre Innfo Paris)

According to a report by L. Tanguy in CPC Document 94/2 the discussion on competencies is increasing in the business world, just as in other spheres of society. The provisions of the Cap Accord 200, on the promotion of training opportunities, signed in October 1990 between the Union of Steel and Mining Enterprises and the trade unions, can be found in some of its elements in a number of large industrial enterprises, services or banks, but the practices in place rarely are enshrined in a coherent policy, and even less so in a policy negotiated between the directors and employees.

The Cap Accord, nonetheless, is an important step towards life long learning, placing obligations on employers to provide opportunities for the acquisition of new competencies. There are specific provisions under the scheme for opportunities for part-time and distance learning. The Accord is not only concerned with training but with the relation between training, competencies and the needs of changing work organization. In other words the enterprise assumes an increasingly important role in the acquisition of new skills in order to enhance the professional career opportunities for the staff, and ensure a profitable future. (Tanguy, 1994)

Such a scheme implies a system of validation and taking into account of the employee's previous training and experience which may, or may not, have resulted in the receipt of a formal qualification. Since, in France, salaries are closely linked to formal academic or professional qualifications it is important that all factors relating to required competencies are taken into consideration, tested and formally recognized, either within the enterprise or externally.

By incorporating all elements of relevant competencies gained and further training for the acquisition of new, formally recognized qualifications, the general drive for the enhancement of the competency levels of the labour force receives additional impetus and provides flexibility of movement within the enterprise and the labour market.

In conclusion, the trend to improving occupational standards and certification observable in France, Germany and the United Kingdom involves large scale Government involvement, through various ministries and agencies, to ensure that training content is relevant to the various sectors, and to the needs of the foreseeable future. Secondly, government agencies, social partner organisations and education and training advisers are involved in drawing up syllabi and the setting of standards for the examinations which will lead to the award of state recognised qualifications.

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Part II - Purchasing Managers: Three Converging Approaches

Chapter 4
An Examination of The Work of Purchasing Managers in the United States Using Job Comparative Techniques

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Introduction

In 1974, the National Association of Purchasing Management established the Certified Purchasing Manager Program. The purpose of the program was (and still is) to maintain recognized professional standards in the field of purchasing, to enhance individual professional competence, and to assist employers by providing them with a means for identifying qualified individuals in the field. One of the requirements for obtaining the designation of C.P.M. is the successful completion of the C.P.M. Examination, a criterion-referenced written test of purchasing and related areas. Candidates for the C.P.M. must pass the various modules of the exam in order to qualify for receiving the C.P.M. designation from NAPM.

Like most other certification tests, the C.P.M. Exam is constructed to be content-valid, meaning that the content domain covered by the test is defined in terms of its importance for competent performance in the occupation. In 1989, NAPM authorized the undertaking of a new job analysis study of the purchasing manager position. This study was conducted for two reasons: First, NAPM wanted to revise the current C.P.M. test specifications, thereby ensuring that the test content was up-to-date, relevant, and in compliance with the testing principles and guidelines set forth in the Standards for Educational and Psychological Testing (AERA/APA/NCME, 1985). Second, NAPM wished to conduct a comparative study of the purchasing manager's role in the various public and private sectors. One of the most frequently voiced concerns about the C.P.M. program over the years has been the question of whether or not the test is valid for all sectors of the profession, due to differences in the role of purchasing in various settings. The study described herewith sought to find a systematic approach to answering the question of how and to what extent the purchasing function varied within different work settings.

Research Questions

Accordingly, NAPM sought to address these concerns by conducting a task analysis to answer the following questions:

1. Is there a substantial difference in the duties of the purchasing manager from setting to setting? Certainly, there are differences in the commodities that are purchased by procurement

personnel in different sectors. But are the duties that purchasers perform, along with their required procurement knowledge and skills, reasonably the same for purchasing managers across the various sectors (e.g. manufacturing, government, retail, education)?

2. If there is little or no difference in the tasks of a purchasing manager across sectors, can an examination be developed that will be valid for all the areas? Can the C.P.M. Exam and related materials be constructed so that it will be universally applicable across settings, thereby expanding the role of the examination, as well as the profession?

This study sought to answer these issues, and was conducted according to the methodology outlined in Gael (1983) for the comparison of job functions and tasks by various jobs.

Scope of the Study

The NAPM Certification Board, which is comprised of a panel of experts with many years of purchasing experience, identified seven major purchasing sectors. These sectors became the focus of study for this job analysis. The areas were:

1. *Manufacturing* - The types of personnel included under this heading were purchasers working for organizations whose prime activity is the manufacture of electronic equipment, automobiles and other transportation equipment, appliances, machinery, metals, mining, paper, plastics/rubber, textiles, furniture/fixtures, chemicals and petroleum. The construction industry was also included with this group.

2. *U.S. Government* - This category was comprised of all purchasing personnel who work for the U.S. federal government, including military procurement. In addition, this category included employees of private organizations that are prime government contractors.

3. *State and Local Government* - This category included purchasers who worked in state, county, and municipal governments.

4. *Institutional* - Under this category were persons engaged in procurement for hospitals, educational institutions, and other non-profit organizations.

5. *Services* - This heading covered a variety of service-oriented organizations including: the communications industry, utilities, transportation companies, banking, insurance, finance, real estate, and hotels/lodging.

6. *Retail* - This category was comprised of persons who buy for retail organizations. It included purchasing agents who buy non-resale items such as displays and "wrap and pack" items, as well as buyers of resale items such as apparel, furniture, and appliances. Also under this category were persons working in wholesale and distribution.

7. *Food* - The persons included in this category were those buying food for restaurants, food manufacturers, food distributors, food retailers, the tobacco industry, and other agricultural products.

Method

Subjects

The participants in this survey were 1496 purchasing professionals from the seven sectors. The participants' names were selected at random from NAPM mailing lists, and from mailing lists obtained from other purchasing organizations.

Procedure

To effectively compare the purchasing manager's function in the various settings, a comprehensive list of tasks was developed. As noted by Smith and Hambleton (1990), professions tend to use different terms for what are fundamentally quite similar processes and procedures within their field. Another important consideration is the assumption within any job analysis that the task survey adequately covers the full range of activities within the profession (Colton, Kane, Kingsbury, and Estes, 1991). The survey was designed to be as valid and as comprehensive to as many of the purchasing sectors as possible, thereby avoiding the assessment of the various sectors on a "biased" instrument. To do this, the researcher employed a three-step strategy:

Step 1. Task data were obtained through a preliminary, open-ended questionnaire (as suggested by Bemis, Belenky, and Soder, 1983), sent to various incumbents selected from the 7 sectors. The survey asked the respondents to list the major tasks of their positions, plus the percentage of time spent performing each task. The respondents were also asked to provide company job descriptions for their own positions, and for related positions. In all, surveys and job descriptions were obtained from 18 subjects sampled from the 7 sectors.

Step 2. Task data were also obtained through one-on-one interviews with incumbents from the 7 sectors. A preliminary list of tasks was formed by combining task information from previously performed job analyses in purchasing. Each interviewee was given a copy of this preliminary list, asked to read each statement carefully, and report whether or not the task as stated was part of his/her present job responsibilities. The interviewees were encouraged to modify each task as they deemed appropriate, and were also asked to indicate any other important tasks that they performed which were not included on the list. In all, 43 incumbents sampled from the 7 sectors were interviewed.

Step 3. Tasks statements obtained from the preliminary questionnaires, from the job descriptions, and from the interviews were combined by the job analyst (with the aid of a purchasing expert experienced in several of the sectors under study) into a comprehensive list of 69 tasks. These tasks were incorporated into a job analysis survey. (Annex 1)

Besides the task list, the survey included a number of background and demographic questions.

Survey respondents were asked to read each task and indicate its importance to their current positions using the following 8 - point scale:

7 - Very High Importance
6 - High Importance
5 - Slightly Above Average Importance
4 - Average Importance
3 - Slightly Below Average Importance
2 - Low Importance
1 - Very Low Importance
0 - Not Part Of My Job/I Never Do It

The advantage of this type of scale is that with the zero point, this scale actually poses two questions to the respondents: 1) "Do you perform the task?", and 2) "How important is the task to your job?" (Gael, 1983). The first question can be analyzed as a percent by dividing the number of non-zero responses by the total number of responses, while the second question can be analyzed by computing the mean value based on the entire range of responses.

Copies of the job analysis survey were mailed to approximately 3800 job incumbents selected at random from the 7 sectors. In all, 1496 persons completed and returned the survey. A breakdown of the respondents by organization type appears in Figure 1.

MANUFACTURING	555
U.S. GOVERNMENT	84
STATE/LOCAL GOVERNMENT	178
INSTITUTIONAL	170
SERVICES	177
RETAIL	160
FOOD	172
TOTAL	1496

Figure 1. Sector Affiliation of Respondents

Results

Task Analysis

Annex 2 illustrates how the results of the task analysis were compiled. Next to each task appears the percentage of respondents (labelled "%") within each sector who indicated that they performed the task. That is, each percentage was computed by adding the numbers of persons within the sectors responding from 1 (Very Low) to 7 (Very High) on the importance scale, and dividing this number by the total number of persons within the sector responding to the task. For example, the percentage of U.S. Government respondents who said they performed Task #2 (Review purchase requisitions for proper authorization) was 77.4%.

The task percentages are followed by two sets of mean importance ratings. The first set of means (labelled "M1") is based only on the candidates who said they performed the task. In other words, this mean is based on the non-missing AND non-zero responses (ranging from 1 to 7) to the task within the particular sector. For example, the average importance rating for Task #2 for the U.S. Government candidates saying they performed the task was 4.7.

The second set of means is for all candidates responding within the sector (labelled "M2"). This mean is based on all non-missing responses to the task. Thus, for example, the average importance rating for all U.S. Government candidates responding to Task #2 was 3.7. This figure is necessarily lower than mean M1 due to the inclusion of persons responding with a zero to the task in M2 (explanations for why two sets of means were computed for each task will be discussed below).

At this point, the objective of the job analysis was to outline the criteria used to determine the important or crucial tasks. Gael (1983) implies that important tasks are those that have a certain percentage of job incumbents performing them AND that have a mean importance rating that meets a specified cut-off point. With respect to percentage, reasonable cutoff point would be 50%, since this would suggest that the majority of incumbents within the sector performed the task. For mean task importance, the point of "3" was chosen as the cut-off - which represents ***Slightly Below Average Importance***—for the reason that all tasks with a mean rating at or above this figure can arguably be considered "Important" to the respondents within the sector, with a slight margin for error in the lower range. Any tasks thus rated at or above this cut-off can probably be assumed to be truly "Important" to those who say they perform the task.

Therefore, the researchers chose to identify as "Important" those tasks that had a majority of persons (50% or more) within a sector indicating that they performed them, and were rated as ***Slightly Above Average*** or higher (3 or more) in terms of mean importance. M1 was chosen as the mean importance rating for this analysis, since this value includes only those persons who actually performed the task, and is not spuriously deflated by those persons indicating that they do not perform the task (and therefore responding with a zero). Figure 2 displays the results of these criteria with the purchasing job analysis data.

For each task, the sectors that met both of the above-defined criteria are indicated with an asterisk (*) in Figure 2. As the results show, the Real Estate Function Tasks (#42-#45) failed to meet these criteria in all of the sectors. These tasks were therefore regarded as irrelevant to the majority of purchasers in all sectors, and were immediately dropped from further consideration. Two other tasks (#38 - Disposing of Hazardous Waste, and #53 - Implementing MRP II) met the criteria in only two sectors, indicating their lack of applicability and relevance to the majority of the profession.

TASK	MANU	USGV	SLGV	INST	SERV	RETL	FOOD
1	*	*	*	*	*	*	*
2	*	*	*	*	*	*	*
3	*	*	*	*	*	*	*
4			*	*		*	*
5	*	*	*	*	*	*	*
6	*	*	*	*	*	*	*
7	*	*	*	*	*	*	*
8	*	*	*	*	*	*	*
9	*	*	*	*	*	*	*
10	*	*	*	*	*	*	*
11	*	*	*	*	*	*	*
12	*	*	*	*	*	*	*
13	*	*	*	*	*	*	*
14	*	*	*	*	*	*	*
15	*	*	*	*	*	*	*
16	*	*	*	*	*	*	*
17	*	*	*	*	*	*	*
18	*	*	*	*	*	*	*
19	*	*	*	*	*	*	*
20	*	*	*	*	*	*	*
21	*	*	*	*	*	*	*
22	*	*	*	*	*	*	*
23	*	*	*	*	*	*	*
24	*	*	*	*	*	*	*
25	*	*	*	*	*	*	*
26	*	*	*	*	*	*	*
27	*	*	*	*	*	*	*
28	*	*	*	*	*	*	*
29	*	*	*	*	*	*	
30	*		*			*	*
31	*	*	*	*	*	*	*
32	*	*		*	*	*	*
33	*	*	*	*	*	*	*
34	*	*	*	*	*	*	*
35			*	*		*	*
36	*	*	*	*	*	*	*
37			*	*		*	*
38			*	*			
39	*		*	*		*	*
40	*		*	*		*	*
41	*		*	*	*	*	*
42							

Figure 2. Sectors with more than 50% performing the task and importance factors greater than 3

However, the remaining 63 tasks within the survey were performed and were deemed important by a majority of incumbents within most or all of the sectors under study, which demonstrated a marked degree of agreement between the sectors. Gael (1983) states that differences obtained between work settings, especially in task occurrence, will indicate that a job is not being performed the same way in each location. Though task occurrence and task importance varied between sectors in this job analysis survey, the results clearly shown an overlap among the sectors. ***Most of the major tasks presented in this job analysis survey were performed by most of the respondents in most of the sectors under study.***

Cluster Analysis of Groups

While there is overlap in the performance of tasks between the various sectors, the overlap is obviously not complete. Given this fact, how do the various sectors combine or "cluster"? Which sectors demonstrate relative similarity to each other, and which are dissimilar?

To address these questions, a hierarchical cluster analysis was computed, based on the mean importance scores for each task for all 7 sectors. Precedent for the use of cluster analysis to compare work settings can be found in Mobley and Ramsay (1973), Cornelius, Carron, and Collins (1979), and Sackett, Cornelius, and Carron (1981). The particular method used in this study was the Average Linkage Within Groups method, which combines cases in a manner such that the average distance between the sectors within the resulting cluster is a minimum. The distances between cases was computed using squared Euclidean distances. The analysis was based upon the M2 importance ratings, whereby zero as well as non-zero responses were used in the determination of task importance, and therefore would be considered in the determination of task importance.

Figure 3 displays the agglomeration schedule for the analysis, which describes how the clusters are constructed at each stage. This information is also displayed in the dendrogram presented in Figure 4.

Stage	Clusters Clst. 1	Clusters Clst. 2	Combined Coefficient	Stage Cluster First Appears Clst. 1	Stage Cluster First Appears Clst. 2	Next Stage
1	1	7	3.413745	0	0	3
2	3	4	11.545241	0	0	5
3	1	5	15.840841	1	0	4
4	1	2	28.580715	3	0	5
5	1	3	39.141811	4	2	
6	1	6	46.472973	5	0	0

Figure 3. Agglomeration schedule using average linkage (within group)

A surprising result is the fact that the State/ Government and Institutional sectors appear to have more in common than do the U.S. Government and State/Local Government sectors, as indicated by the fact that the U.S. Government sector combines with the Manufacturing/Food/Service cluster before it combines with the State/Local sector. As expected, the Retail sector appears to have the least in common with all other areas, and therefore "stands alone" when compared with the others in terms of task importance.

While no definitive method exists for halting the formation of clusters, one approach is to cease clustering when the increase in the coefficient of squared Euclidean differences becomes relatively large. For these results, the largest increase in the coefficient lies between Stages 3 and 4, suggesting that the 4 cluster solution at Stage 3 becomes the ideal for determining multiple clusters. The clusters at this stage are:

Cluster 1: U.S. Manufacturing/Food/Service
Cluster 2: U.S. Government
Cluster 3: State and Local Government/Institutional
Cluster 4: Retail

These 4 clusters therefore appear to be the most suitable format for combining the sectors.

```
                   Rescaled Distance Cluster Combine

                    0         5        10        15        20        25
Sector              +---------+---------+---------+---------+---------+

MANUFC              -+-------------+
FOOD                -+             +--------------+
SERVICE        --------------------+              +-----------+
US GOV         -----------------------------------+           +--------+
S/L GV        ------------+-----------------------------------+        |
INSTIT        ------------+                                            |
RETAIL        ---------------------------------------------------------+
```

Figure 4. Dendrogram using average linkage (within group)

Discussion

The results of the task analysis indicate that previously held perceptions of the work of a purchasing manager differing markedly from sector to sector were probably overstated. Due to the great deal of task overlap, the development of a universal or multi-sector examination program, based on the common tasks performed and deemed important by a majority of persons within a majority of sectors, becomes a feasible course of action. In light of the task overlap among the sectors, it appeared unlikely that individual sector modules would contain a great detail of unique material. There was little doubt that some differences in task occurrence and task performance among the various sectors exists, but the results of the task analysis seemed to suggest that the differences are not so profound as to warrant separate examinations. Had the results of the task analysis not revealed the great amount of overlap between the sectors, the logical course of action would have been the development of separate specialty examinations, using the results of the ***cluster analysis*** as a guide in the construction of separate tests, and having the examinations and related materials developed by SMEs representing the sectors within each cluster. The task areas included in each "cluster" exam would only be those found to be relevant to the sectors that constituted the cluster.

In the development of a single, profession-wide, universal certification instrument, SMEs serving as representatives from all of the 7 sectors were recruited to review items from the current C.P.M. item bank, and revise or delete questions that cover topics too specific to particular sectors to include in an examination geared to a diverse audience. The sector representatives were also included in the development and review of the exam study materials, and to serve as representatives on the Certification Board.

It should be noted that not all of the content identified as important in the job analysis was deemed applicable to all aspects of the profession. In the process of writing and reviewing new exam and study materials, concepts emerged that were specific to certain areas, thereby revealing differences between the sectors. These differences were not ignored. Indeed, "site-specific" content remains in the exam and study materials. The concepts of MRP and MRPII, for instance, have little applicability to the State/Local Government, Institutional, or Service sectors, yet these topics are included in the program. Certain concepts, while applicable to all areas, have varying degrees of importance and practice in certain sectors (e.g., competitive bidding in the public vs. private sector). Wherever possible, such specialized issues or topics are accompanied by qualifications as to the limited applicability of the topic. For example, if a question is designed to test for a topic that is applicable only to the work of the manufacturing purchaser, the question is prefaced with "in the manufacturing sector". In a similar fashion, the associated study materials discussing the topic will also mention the limited applicability of the concept.

Therefore, while the focus of the C.P.M. program is on the common areas of the profession, it does not ignore or downplay the important topics that are unique to the various sectors. Under this scenario, the "ideal" C.P.M. candidate is one who is well-versed in the fundamental concepts of the purchasing manager's profession, but also is cognizant of the differences in the profession in the various settings. In this way, the exam seeks to broaden the profession, without ignoring the crucial differences in the purchasing function in the various sectors. As a result, the designation of C.P.M. means that the individual possesses ample knowledge of the common, fundamental concepts required to adequately perform work of a purchasing manager, and is also able to meet the special purchasing needs of an employer in any one of the 7 sectors discussed in this study.

The results from the job analysis were used to develop several materials, including a profession-wide job description, examination, and study guide.

Development of a Job Description

Based on the results of this job analysis, a job description of the purchasing manager position was developed by the researcher, to serve as a general guide as to whom this examination program is applicable. This description was developed from a compilation of the tasks found to be applicable to a majority of purchasers across the various sectors. This job description appears in Box 1.

Examination Development

Based on the finding that little difference existed between the various job sectors, we proceeded to develop an examination applicable to all of the sectors under study, in accordance with the procedures outlined by Mussio and Smith (1973) to develop content-valid tests. This began with a determination of the knowledge areas associated with each task. Using the previous test specifications, a preliminary list of knowledge areas for each task was developed. Knowledge areas for tasks that were common to both the old specifications and the new job analysis were entered into the preliminary list, after some modifications.

Copies of the preliminary list were sent to a committee of subject matter experts (SMEs). This committee was comprised of representatives from all of the seven sectors under study, as well as several purchasing academics. Copies of the preliminary list were also mailed to the NAPM group chairs.

BOX 1: Definition Of A Purchasing Manager

A purchasing manager is an individual working for any private, public, or nonprofit organization who performs and/or has primary responsibility for the procurement of materials, equipment, or services for that organization. The size of the purchasing manager's department may range from one person to several thousand. The commodities may be purchased either for the use of the organization, for the manufacture or development of other materials, or for resale to other organizations or the general public.

In order to perform this function, the purchasing manager will engage in, or else will have direct responsibility for some or all of the following functions: reviewing procurement requests; soliciting and evaluating proposals; analyzing current and potential suppliers; conducting negotiations; executing, implementing, and administering contracts; developing forecasts and procurement strategies; supervising and/or monitoring the flow and storage of materials; and developing working relationships with suppliers and with other departments within the organization.

The purchasing manager has or shares responsibility for the administrative aspects of the purchasing department; and will usually perform personnel functions such as hiring, training, and supervising other purchasing personnel.

The SMEs and group chairs reviewed the list of knowledge areas for each task, and were asked to modify, add to, or delete from the list as they deemed necessary in order to best describe the knowledge a person needed to possess in order to perform the task. The representatives from the 7 areas were instructed to modify the list from the standpoint of an individual in their particular area of purchasing. The purchasing academic SMEs were asked to modify the list from the viewpoint of the profession as a whole.

The modified preliminary lists from the SMEs, as well as a list of the NAPM group chairs' comments, were sent back to the researcher, who compiled all of the additions and changes into one comprehensive list. The committee members then met to review the comprehensive list, and modify, add to, and delete from it as they deemed appropriate, in order to emerge with a body of purchasing knowledge that would be of importance to all or most of the sectors. The attendees at this meeting were instructed to focus on the "common ground" - that is, on topics that were of importance to all of the sectors. Committee members were permitted to inject topics that were crucial yet specific to their particular sectors, and in some cases, these topics were included in the final list. However, the main focus of the meeting was to determine the areas that the various sectors had in common.

Since the majority of respondents to the task analysis reported that they did not perform any of the tasks listed under the Real Estate Function heading, Task #s 42, 43, 44, and 45 were dropped by the committee. Though Task #38 (Controlling hazardous materials) and Task #53 (Implementing MRP II) were also not performed by the majority of respondents in the majority of sectors, the committee nevertheless deemed those tasks as important for the examination, and recommended that they remain in the specifications.

The task and knowledge areas were reviewed at a second meeting by the NAPM Certification Board, which made several additions and modifications to the list, and approved the final version as the content specifications for the exam. The content specifications are made available to all C.P.M. candidates. A sample page from these content specifications appears in Box 2.

Development of Study Materials

A third major component developed from the job analysis data was the C.P.M. Study Guide (Muller, Dobler, Page and Scheuing, 1994), which is the reference manual for examinee preparation for the test. The Guide was constructed according to the results obtained from the job analysis, extending the use of techniques employed in the development of task-based training programs (Mitchell, Ruck, and Driskill, 1988).

The approach used to construct the Study Guide was based on a belief that the Guide should be exactly what its name implies: ***A guide to study*** for the examination. The Study Guide acts as a compendium of the material on the test. The intent was not to develop another text in purchasing, or have the Study Guide serve as a substitute for reading one or more purchasing texts. Furthermore, the purpose of the Guide is not to provide lengthy treatises on various exam- related topics, but rather to provide direct answers to questions examinees may have regarding the content of the examination, and an overview and orientation to the material on the test.

In order to meet these criteria, the Guide was constructed to follow ***as closely as possible*** the C.P.M. Exam Specifications, as shown in Figure 8. Each task of the exam served as a chapter for the Guide, and the list of knowledge headings associated with each task served as an outline for the chapter. A sample page from the new Study Guide, associated with the test specifications appearing in Box 2 is presented in Box 3.

Note that most of the summaries associated with each knowledge area heading are just one or two paragraphs in length, and written in a direct, terse fashion. Each chapter includes references to well known textbooks and other resources, to provide candidates with direction for further study. Constructing the Guide in this manner ensures its relevance to the exam and exam specifications, and its relevance to the position of purchasing manager.

It should be noted that C.P.M. Examination Question writers are encouraged ***not*** to write items from the Study Guide. The Study Guide serves only as a resource for general direction to study - it is not meant to serve as a direct source that can suffice on its own for exam preparation.

BOX 2: Example of a Task and Associated Knowledge Areas From The C.P.M. Examination Specifications

TASK 7: Participate in decisions to lease or buy equipment.

Knowledge of:

1) Types of Leasing Arrangements
    A) Operating Lease
    B) Financial Lease
        1.0 Full Payout
        2.0 Partial Payout
    C) Leveraged Lease
    D) Master Lease
    E) Dry Lease
    F) Sale and Leaseback

2) Types of Lessors
    A) Third-party lessors
    B) Manufacturers
    C) Banks

3) Factors in a Lease/Buy Decision
    B) Obsolescence
    C) Maintenance services
    D) Capital/budget considerations
    E) Administrative overhead
    F) Reimbursement from third parties
    G) Interest
    H) Ownership benefits
    I) Limitation of sources of supply
    J) Balance sheet considerations
    K) Cash flow analysis
    L) Depreciation
    M) Tax considerations
    N) Operating costs
    O) Life of the asset
    P) Residual value
    Q) Customization of asset

4) Legal/accounting considerations
    A) Uniform Commercial Code 2A - Leasing
    B) FASB-13

BOX 3: Sample page from C.P.M. Study Guide

Module 1, Part A:

TASK 108: Participate in decisions to lease or buy equipment.

A lease is a contract where one party (the lessee) has use and possession of an asset owned by another party (the lessor) for a period of time in return for a monetary payment. The lessee makes scheduled payments (usually monthly) to the lessor.

Lessees do not own the assets but are permitted to claim rental payments made on such assets as tax deductions. Lessors make a profit on the difference between the financial ownership cost of the assets and the rental/or lease rate. At the end of the lease term, the lessee may purchase the asset, return it to the lessor, or renew the lease for a longer time period, depending on the lease specifications. The lessee could be a company of any size.

1) TYPES OF LEASING ARRANGEMENTS:

The major types of leasing arrangements are as follows:

A) Operating Lease - This type of lease is used by most organizations to facilitate business operations. Most are short-term, for a period considerably less than the asset's useful life. It is used in cases where equipment is required for short time periods or subject to rapid obsolescence and where the leasing organization is not interested in owning the equipment.

B) Financial Lease - This type of lease runs for the full life of the equipment. Many financial leases are non-cancelable. Their purpose is entirely financial in nature, where the lessee seeks to gain financial leverage and related long-term financial benefits. There are two major types of financial leases:

1.0 Full payout - With this type of lease, the lessee pays the full purchase price, plus interest charges, maintenance, insurance, and administrative costs.

2.0 Partial payout - This type of lease gives the lessee credit for the residual value of the leased item after the lease period is completed. The lessee pays the difference between the original purchase price and the resale value, plus interest charges.

C) Leveraged Lease—A leveraged lease is one that involves a third-party lessor that buys the asset from an equipment producer and lease is to another firm. These are usually formed because of unique tax and borrowing power the arrangement provides the lessor. Typical lessors are large investors such as insurance companies, pension funds, or investment groups.The lender's debt is primarily secured by an asset, and to some extent by the financial capacity of the lessee.

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ANNEX 1: Job Analysis Survey

Purchasing Job Analysis Questionnaire

A Word About the Survey

The purpose of this survey is to compare up-to-date information about the purchasing function in a variety of settings. You can help us by responding to the following questions about your current position. We need this information to obtain meaningful data about the work you and other purchasing professionals are currently performing.

The information you provide in this survey will be seen only by those who are involved with processing and analyzing the data. No one in your organization or at NAPM who is not associated with computerizing the survey data will have access to your responses. This survey is being conducted solely to understand the purchasing professional's job, not analyze individual performance.

There are two parts to this survey. The parts are:

Part A - General Information

Part B - Task Analysis

Please answer each item in each part. **Do not omit items.**

What To Do With Your Completed Booklet:

When you have answered every item in the survey, seal the survey in the envelope provided and mail it to:

NAPM
P.O. Box 22160,
Tempe, Arizona 85285-2160.

ANNEX 2: Example Of Percent And Means For Task Statements By Sector And For Total Sample

				U.S. S/L				
Procurement Requests		MANU	GOVT	GOVT	INST	SERV	RETL	FOOD
1. Review purchase requisitions to determine their appropriateness with regard to organizational requirements.	%	85.5	77.4	89.9	93.5	81.3	84.3	79.5
	M1	4.5	4.4	4.7	4.8	4.5	4.7	4.4
	M2	3.8	3.4	4.2	4.5	3.7	4.0	3.5
2. Review purchase requisitions for authorization.	%	82.5	77.4	89.9	90.0	77.8	73.0	81.3
	M1	4.4	4.7	4.8	5.2	4.8	4.3	4.6
	M2	3.7	3.7	4.3	4.7	3.7	3.2	3.8
3. Review purchase requisitions to determine their conformance with established laws, policies, and procedures.	%	86.0	89.3	95.5	95.3	82.3	77.2	79.5
	M1	4.4	5.3	5.7	5.8	5.1	4.2	4.5
	M2	3.8	4.7	5.4	5.5	4.2	3.2	3.6
4. Review purchase requisitions against the requisitioner's or organization's budget.	%	49.3	47.6	71.8	61.2	46.6	63.3	52.0
	M1	3.3	3.7	4.3	4.1	3.1	4.4	3.5
	M2	1.6	1.8	3.1	2.5	1.4	2.8	1.8
5. Participate in product "make-or-buy" analyses.	%	84.6	73.5	59.3	60.0	63.6	54.1	80.0
	M1	4.5	3.6	3.7	3.9	3.6	4.5	4.2
	M2	3.8	2.7	2.2	2.4	2.3	2.5	3.3
6. Identify and/or select potential sources of services or supplies.	%	98.4	91.7	98.9	99.4	96.0	97.5	98.2
	M1	6.0	5.7	5.7	5.5	5.6	5.8	6.0
	M2	5.9	5.2	5.6	5.5	5.3	5.7	5.9
7. Participate in decisions to lease or buy equipment.	%	80.3	72.6	89.3	95.3	77.8	69.2	78.4
	M1	4.4	4.8	4.9	5.0	4.2	4.1	4.5
	M2	3.5	3.5	4.4	4.8	3.3	2.9	3.5

Chapter 5
The Development And Implementation of National Vocational Qualifications in Purchasing: Some Issues of Validity and Value

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Abstract

This paper outlines the process through which competence based National Vocational Qualifications in Purchasing have been developed against the context of criticisms of the concept of competence itself and the methodology adopted. It is argued that the validity of such qualifications lies in practitioner involvement in their development and assessment. They also have value through their incorporation in organizational personnel selection and development process. Ultimately, however, their validity and value remain to be established through empirical research into the extent and impact of their implementation.

This paper draws on the debate over the validity of competence based approaches to vocational education and training to examine the case of Purchasing, one of some 150 occupational areas for which standards have been or are being developed. Whilst the Purchasing case, supported by evidence from other occupational areas, provides the opportunity for a detailed analysis of the process of standards development, the issues examined and the arguments presented are equally applicable to other occupational areas. It is hoped to balance the theoretical debate on the validity of the methodology, which focuses on the nature of the inputs to the process, with consideration of its value in respect of the potential outputs and outcomes.

Validity

Claims for the validity of competence based standards lie in the argument that they offer individuals the opportunity to achieve qualifications which directly relate to required performance in the workplace. This derives from the requirement that their development is employment led, involving the participation of practitioners, and that their assessment is based on evidence of performance in the workplace.

Standards are a definition or specification of performance which is regarded as satisfactory for a particular job role, i.e., what someone working in purchasing is expected to be able to do. "Standards are benchmarks; descriptions of the expectations of employment against which the actual performance of individuals will be compared and assessed as competent or not competent as appropriate". (Mansfield 1991) Standards therefore place the emphasis on performance, i.e. what people need to be able to do, not purely on what they know or understand.

Standards are intended to provide a precise point of reference for vocational education and training, employee development and other human resource activities. It became apparent during the 1970s and 80s that the UK Vocational Education and Training (VET) system was unable to meet the needs of employers in terms of employees equipped with the level and quality of skills and knowledge required in the workplace. A significant cause of this problem was identified as the absence of agreed standards explicitly describing the requirements and expectations of employment. Without such standards much of the VET was inappropriately targeted and thus not producing employees with the skills and knowledge needed by employers.

Various critical reports led to a whole scale review of the VET system and this subsequently led to a number of new policy initiatives, one of which was the Standards Programme. This was started in 1986 in order to "Establish clear occupational standards across industry from the shop floor to the boardroom"; and to change the qualifications and training systems so that they are clearly based on standards: "on what industry needs, rather than what educationalists and trainers think we need". (Training Agency, 1989)

Standards are the starting point for the new approach to VET. The standards define what employees are expected to be able to do, and then National Vocational Qualifications, assessment systems and training programmes are based on those standards.

Employment Led

The development of standards is employment led i.e. to meet the needs of employers and employees. The Department of Employment's Training, Enterprise and Education Directorate (TEED), was charged to work with industry to facilitate the identification of industry standards and since 1986 has invited employers to form themselves into Industry Lead Bodies (ILBs). The role of these ILBs is to identify, develop and maintain standards within particular areas of employment. In many cases existing employer representative bodies have taken on this role, for example the National Retail Training Council (NRTC) or the Chemical Industries Association.

For many areas of employment, particularly those which are occupational or cross-sectoral rather than industry or sector based no suitable bodies existed and therefore had to be created. The Purchasing and Supply Lead Body (PSLB) was established in 1989 to develop standards of competence for all areas of the supply chain. In addition to Purchasing, this covers Materials Management, Inventory Control, Distribution, Transport and Project Management. The PSLB consists primarily of senior purchasing and supply practitioners from a wide range of organizations from both the public and private sector. Although much of the research and development was actually undertaken by consultants it was up to PSLB to approve, monitor and scrutinize each phase of the standards development programme to ensure that the standards produced meet the needs of employers and employees.

The methodology for standards development laid down by TEED requires Lead Bodies through their consultants to:

1. Undertake a functional analysis of their particular occupational area to provide a framework for ongoing standards development.
2. Develop standards which reflect a "broad" view of work roles. TEED recommend the use of the Job Competence Model which suggests that all work roles have four key aspects:
    - the ability to perform the technical aspects of the work role, i.e. technical skills
    - the ability to manage variance in working practices and processes, i.e. contingency management skills
    - the ability to manage the components of the job so that overall job and organizational objectives are achieved, i.e. task management skills
    - the ability to perform the job-role within particular working environments which have specific characteristics, i.e. job role environment skills. (Mathews and Mansfield, 1985)
3. Maximise the level of consultation during standards development. The greater the level of consultation and practitioner participation the greater the validity and legitimacy of the resulting standards within the occupational area.

Thus interviews were conducted with over 100 Purchasing staff at various levels: purchasing assistants, buyers, senior buyers, purchasing managers and directors, from a variety of organizations. The interviewees were questioned regarding their job roles, i.e. what they were expected to do and why. The outcome of the interview programme was an initial draft set of standards which were widely circulated in order to generate discussion and feedback. The draft standards were scrutinized during a series of practitioner workshops. The comments from these workshops and the feedback from the circulation of the draft standards were used to revise the standards. These standards were then field tested in a number of organizations to ensure their validity and usability in the workplace. The feedback from the field testing phase led to further revisions and the final Standards for Purchasing were presented to PSLB in June 1992. At each stage of the process the members of the Lead Body were closely involved in scrutinizing the proposed standards.

Box 1 presents the Functional Map developed for the purchasing and supply functions. In common with all National and Scottish Vocational Qualifications, the map includes both core purchasing standards and general standards relating to competences in areas such as health and safety, professional relationships, and information systems. The core purchasing standards are based on a model representing a logical sequence of actions carried out in the processes of sourcing and contracting, as presented in Box 2. Thus, it is argued that logically all purchasing actions start with analysis of the market to determine its competitiveness. Potential suppliers are then identified in accordance with established criteria. These may be current or new suppliers, but the overall size of the supplier base must be analysed in order to ensure it is optimal: if it is too large, unnecessarily high transaction costs may be incurred; if too small, there may be insufficient competition in certain areas. From this analysis, some suppliers may be identified as suitable for single sourcing or partnership arrangements. Finally, suppliers' performance should be monitored and improvements obtained. Within this overall strategic sourcing process, many separate contracting processes may take place. These arise from an initial identification of requirements, for which suppliers are selected from those previously identified as potential suppliers using either formal competitive tendering or more informal bidding or negotiation methods. Agreements to supply are then formalised. Supplier performance is monitored through vendor rating, and where necessary improvements are negotiated. Underlying all of these processes is the need to monitor and improve the performance of the operations and staff involved in the purchasing process.

BOX 1: Functional Map Of The Purchasing And Supply Chain

The key purpose suggested for the Purchasing and Supply Chain is to:

"provide the interface between customer and supplier in order to plan, obtain, store and distribute as necessary, supplies of materials, goods and services (m, g, s.) To enable the organization to satisfy its external and internal customers.

The major functions which support this key purpose are as follows:

1. Contribute to the formulation, communication and implementation of policies, strategies and plans.
2. Contribute to the establishment, and improvement of purchasing related systems.
3. Create and maintain a database of purchasing and stores information.
4. Establish and improve sources of supply.
5. Acquire supplies.
6. Provide goods and materials to internal and external customers through storage, movement, distribution and transport.
7. Monitor and control the purchasing, supply, storage, distribution and transport chain.
8. Contribute to effective working.

BOX 2: Core Purchasing Standards

4 Establish and develop sources of supply

- 4.1 Determine conditions in the market for supplies
  - 4.1.1 Establish own organisation's position in the marketplace
  - 4.1.2 Identify market changes likely to affect supplies
  - 4.1.3 Determine competitiveness of supplies from the market
  - 4.1.4 Identify beneficial developments relating to supplies and their sources

- 4.2 Determine potential suppliers through vendor evaluation
  - 4.2.1 Determine vendor capacity to supply
  - 4.2.2 Evaluate financial viability of supplier for continuity of supply
  - 4.2.3 Determine status of potential supplier

- 4.3 Optimise supplier base
  - 4.3.1 Assess opportunities for rationalising the supplier base
  - 4.3.2 Rationalise the supplier base

- 4.4 Enter into strategic sourcing arrangement
  - 4.4.1 Evaluate the case for strategic sourcing
  - 4.4.2 Establish strategic sourcing arrangement
  - 4.4.3 Maintain and improve arrangements for strategic sourcing

- 4.5 Determine supplier performance and continuity of supply
  - 4.5.1 Monitor financial viability and technical capacity to supply
  - 4.5.2 Monitor supply performance of supplier
  - 4.5.3 Establish supplier's overall rating through vendor rating system

- 4.6 Obtain improvements in supplier performance
  - 4.6.1 Resolve user complaints with suppliers
  - 4.6.2 Provide feedback, advice and assistance to supplier
  - 4.6.3 Negotiate changes in supplier performance to meet required standards and assist with implementation

5 Acquire Supplier

- 5.1 Establish and evaluate current and future requirements for supply
  - 5.1.1 Provide information on supplies to users
  - 5.1.2 Agree specification with users
  - 5.1.3 Contribute to the establishment of type and duration of supply agreements

- 5.2 Maintain effectiveness of purchasing operations
  - 5.2.1 Establish objectives of purchasing operations

This model was validated through the research process as an overall framework, though practice varied from organisation to organisation, and actions were not necessarily carried out in the logical sequence proposed. The NVQs at Levels 2, 3 and 4 of the NCVQ Framework were developed on the basis of these standards. These relate broadly to Purchasing Assistant, Buyer and Senior Buyer job profiles. Level 2 incorporates less complex competences such as simple queries and providing feedback to users and suppliers, obtaining quotes and placing orders and progressing the delivery of supplies. Level 3 competences are more complex and varied, with a greater degree of responsibility and autonomy. They include establishing supply requirements, maintaining the effectiveness of purchasing operations, and negotiating improvements in supplier performance. At Level 4, there is greater responsibility for the work of others and the allocation of resources. Strategic competences such as determining market conditions, vendor evaluation and strategic sourcing are therefore incorporated, together with the responsibility for 'mentoring' lower level staff.

In order to illustrate the structure of standards laid down by NCVQ in relation to Purchasing, Box 3 presents an element on Strategic Sourcing. The competence is in establishing a strategic sourcing arrangement, which is a relatively high level function and it is therefore only at Level 4. Performance Criteria specify those aspects of competence which are to be demonstrated, i.e. selecting the correct form of agreement, ensuring that it covers all important areas, and that outside advice is sought where necessary. Range Statements specify the variables of context or nature across which candidates must demonstrate competence. In this case the range relates to the nature and content of the agreement. Underpinning Knowledge is the minimum necessary to underpin competence: here basic legal knowledge is required, as well as knowledge of sources of advice and negotiation techniques, all of which are essential for a candidate to be able to establish such an agreement correctly.

Guidance to Assessors specifies what needs to be assessed and how often, as well as the sources of evidence on which assessment will be based. In this case it is primarily from observation of interactions with parties to the agreement and the documented agreement itself, supplemented by tests of knowledge. As this is a competence which some candidates may not have the opportunity to demonstrate very frequently, simulation may be used if performance evidence is not available.

The purchasing standards are therefore the product of a lengthy research and development programme during which purchasers from a variety of organizations across the country have participated in interviews, workshops and field testing. The standards have been developed so as to have general applicability to all organizations and individuals involved in purchasing. They are intended to represent what purchasers in all sectors, industries and organisations are typically expected to be able to do. Organisations may have additional or higher expectations of performance required of their purchasing staff and the national standards can be contextualised to reflect specific organisational practice (see below).

Assessment

N/SVQs are qualifications based on nationally recognized standards. An N/SVQ is a statement that an individual has achieved a level of performance agreed nationally to be satisfactory for a specified occupational area. A system for assessing and certificating individuals as being competent is therefore necessary. The operation of that system is the responsibility of an awarding body. For the Purchasing NVQs City and Guilds and the Royal Society of Arts are the awarding bodies for England, Wales and Northern Ireland and SCOTVEC for the equivalent SVQs in Scotland. The awarding bodies appoint national verifiers whose role is to monitor the standards of assessment at accredited centres, which are normally employing organisations or colleges. The centres themselves provide assessors who assess candidates against evidence of performance, normally in the workplace.

The standards define performance which is regarded as satisfactory. For an individual to meet the standard they would have to demonstrate that they can perform in the contexts, circumstances and conditions defined by the range to the level specified in the performance criteria. An individual would have to produce evidence to demonstrate this. Each standard offers guidance as to the nature and type of evidence which should ideally be demonstrated by the individual. As the standards are concerned with competence in the workplace the suggested form of evidence is primarily performance evidence, either direct observation of the individual at work or a product of work, for example, a contract or report.

Criticisms

The approach to standards development outlined above, especially the dominant role of functional analysis, has attracted considerable criticism, especially from higher education but also from the training community and practitioners. The main points of criticism are outlined briefly below.

Higher Order Skills

TEED recognizes the existence of different levels of job roles in the form of the five level NVQ framework "but it contradicts this by insisting that the same method, functional analysis, be used for analysing any occupation, at whatever level" (Holmes 1992). Most people accept the validity of using functional analysis to develop standards for low level job roles which are generally low in skill and knowledge content and consist of a small number of relatively simple activities, performed frequently. However it is suggested that performance in "professional" job roles is determined not only by technical aspects (i.e. the application of skill and knowledge) but also by individual reflection on previous experience and reference to ethics and values. Cave and McKeown (1993) identify `higher order skills' such as reading the situation, balanced judgement, intuition and political acumen which the narrowly task related functional analysis would fail to recognize. Thus it is argued that the methodology adopted results in standards which are fundamentally flawed.

Subjectivity

Functional analysis involves breaking down or disaggregating an occupational area into separate units and elements which combine to represent an occupational role. However it is questionable as

BOX 3: Sourcing Module: Relevance To Standards And Teaching Materials

Topic	**Standards**
1. Models of the Supply Chain	no direct relationship
2. Supply Market Analysis	UNIT 4.1
Exercises on sources of information, analysis of market structures	
3. Vendor Appraisal	UNIT 4.2
Exercise and case studies on establishing and applying criteria	
4. Optimizing the Supply Base	UNIT 4.3
Exercise using Purchase Portfolio analysis and case studies	
5. Partnership and Strategic Supply	UNIT 4.4
Case studies	
6. Supplier Networks	no direct relationship
7. Planning Purchasing Requirements and Specifications	UNIT 5.1
Exercise on specification	
8. and 9. Supplier Selection	UNIT 5.3
Exercises on drafting tender notices and evaluation of tenders	
10. Contract Negotiation and Award	UNITS 5.4, 5.5
Exercises on contract negotiation and contractual disputes	
11. Managing Supplier Performance	UNIT 4.5
Case study: Ford UK	
12. Supplier Development	UNIT 4.6
Case study: Nissan UK	

Aspects of UNIT 5.2 Maintain effectiveness of purchasing operations are covered under various topics to whether there is an absolute and objectively defined role in the first place: "Rather the role will be defined by the perceptions of different people, which in turn will be the product of their culture, history and interactions with others...

Not every car mechanic or hairdresser recognizes the descriptions of their job found in the elements of competence drawn up by lead industry bodies and it is common for employer and worker to see the same role differently". (Hodkinson 1992)

Pye (1988) is also critical of the subjectivity associated with the assessment of competence, arguing that it is a social construct:

> "competence is not something to "be possessed": rather it is something "given" by other people in their evaluation of the actions of others in a particular situation at a particular time."

Atomistic

Functional analysis "urges us to treat any particular competence as a complex entity made up of a number of simpler items of ability . . . elements of competence . . . . Thus, it is assumed in practice that individual elements of competence add together to produce global competence". (Ashworth and Saxton 1990) There is a concern that in concentrating on individual items, i.e. the elements of competence, and an additive view of competence the integrative and co-ordinating skills required in the workplace are being overlooked (Pye 1988). These are the skills which allow an individual, where necessary, to perform several or all the items as a coordinated whole. Without such skills the sum of the parts equals less than that of the whole.

Lack of Precision

It is also claimed that the process produces standards which lack clarity and are vague in actually specifying what the individual has to be able to do and to what level. It may be possible for the meaning of an element to be interpreted differently by different people, assessors and organisations. If this happens and people are applying and assessing against different interpretations, where is the standard?

The wording of performance criteria has also been criticised particularly the use of words such as "promptly", "accurately", "correctly", to specify the level of performance. A performance criterion such as "User requests and questions are dealt with promptly" can have very different meanings to different organisations depending on how "promptly" is defined. Again how is the standard to be applied and ensured?

The Case for Validity

Some critics argue that the validity of standards based qualifications is fundamentally challenged because of the force of such arguments. However, it is necessary to balance such criticism with a recognition that the methods of education and training existing prior to the development of national standards were themselves flawed, and in particular had failed to produce a skilled workforce:

> "... the poor long term performance is believed to be due partly to lack of adequate education and manpower policies.
>
> ... The strongest criticism has been directed at the way in which the education system has tackled the production of highly qualified technical manpower and, especially, engineers with skills relevant to manufacturing industry". (Lindley 1981)

It is also important that the claims for N/SVQs are not overstated. The aim is to provide a baseline of competence: to ensure for example that all purchasing staff qualified to a particular level are competent in the specified tasks set out in the standards. It is not therefore disputed that staff, in particular those in more senior posts, will require additional knowledge based qualifications and training programmes to develop broader perceptual and deeper analytical skills.

Finally, the force of the criticisms may be conditional on factors specific to the particular sector or function, and how effectively the process of standards development has been managed. In particular where practitioners and their representatives on the Lead Body, educationalists and professional bodies have been closely involved in the development of the standards, and accept them as representing a reasonable consensus of what is required of staff at various levels within employing organisations, their validity may be greater than if this were not the case. It is our contention that the Purchasing standards are the product of such a consensus. The ultimate test will nevertheless be the extent of uptake of the standards by employing organisations and their staff, and in the longer term whether this results in improved performance, however that may be measured.

Value Of The N/SVQs And Standards

The assumption underlying the development of N/SVQs is that employers value competent performance, they value and want competent employees. Therefore they will value qualifications which signify or identify that an individual is competent, and will encourage employees to gain such qualifications.

"Vocational and professional qualifications are not like Olympic medals; they have value only if they are useful in the context of employment. Employees will find a qualification useful if it is recognized and valued by employers. An employer will recognize and value a qualification if it is useful when taking human resource management and development decisions in selection, training and development, remuneration and rewards, promotion and so on". (Holmes 1992)

However, these assumptions remain to be tested in Purchasing. This section of the paper will examine how the standards may be used so as to achieve the benefits claimed for the organisation and the individual.

Contextualisation

The purchasing standards are national standards. They have been developed to specify the minimum level of performance it is reasonable to expect of purchasers in any organisation regardless of sector or industry. They represent a national reference point for purchasing and purchasers. However organisations are able and encouraged to contextualise or tailor the standards to reflect their own particular sector, industry and organisational practice. This will serve to enhance the relevance of the standards and provide the organisation and its staff with a greater sense of ownership of the standards.

Contextualisation generally involves increasing the specificity of the standards to reflect the performance required of individuals in that particular sector, industry and organisation. In practice it should involve the organisation mapping particular sets of standards against appropriate job roles in the organisation, for example, mapping the level 4 purchasing standards against the senior buyer job role. The organisation has to determine whether the level 4 standards are clear, valid and complete in specifying the level of performance required of senior buyers in the organisation. This mapping may suggest the need for additional performance criteria and/or extended range. It may even suggest the need for additional elements or units. Organisations can contextualize the standards further by making reference to specific purchasing procedures and documents. For example, for the element "Obtain bids" performance criterion "(a) potential suppliers are invited to bid against specification" becomes "(a) at least 4 potential suppliers are invited, using form 1A, to bid against specification".

It must be noted that N/SVQs are assessed and awarded against the agreed national standards only and not against any additional units, elements, performance criteria and range which have been produced by contextualizing the standards. If an individual satisfies the national standards then they are eligible for the N/SVQ.

Communicating Required Performance to Employees

The standards can be used to inform employees as to what is expected of them. How many organisations have a formal document which does this? They may have a purchasing manual which advises on procedure, the use of documentation and authority levels but nothing which states what they are expected to be able to do and to what level. If employees do not know what is expected of them how will they know whether they are meeting the required level of performance?

"My work with blue-chip clients in a wide range of industries has illustrated that considerable added value derives from the introduction of competence based standards. For example, individuals within the organisation have access to the standards and therefore know exactly what is expected of them - this encourages individuals to take more responsibility for their own development and for the maintenance of competent performance". (Fletcher 1992)

Performance Appraisal and Identification of Training Needs

All organisations need to undertake formal appraisal of employee performance. If the organisation accepts their validity the standards can be utilized as criteria for performance appraisal because they specify required performance. Assessment of employees against the standards allows the comparison of actual employee performance with required performance.

The standards facilitate objective appraisal of employee performance; an individual is competent or not competent. Those areas for which the individual is currently not competent represent areas of deficient performance, where training or more experience is needed in order for actual performance to meet the standard. i.e. the 'competence gap.'

Those organisations which choose to introduce N/SVQs will need to introduce the formal systems necessary to assess employees against the standards, for instance logbooks, evidence portfolios and internal assessors. It is therefore economical to use the results of such assessment for internal use i.e. for performance appraisal, as well as progress towards N/SVQs. Organisations which do not wish to register for N/SVQs may of course still use the standards as the basis for assessing employee performance, without the need to seek external accreditation.

Designing Training Programmes

Training is **input** based. It is concerned with providing employees with the right knowledge and skills needed to achieve and/or maintain a certain level of performance. Standards are **outcome** based, because they define required performance in the workplace in terms of what employees should be able to do. Using the standards as a basis, training programmes can be designed to ensure they provide people with the appropriate skills and knowledge to be able to perform to the level required.

The organisation of the standards is intended to assist the training design process. Individual standards are organised into units, each of which relates to a recognised theme of competence, for example "Contracting for supply". In this way each unit provides the basis for a potential training module which will deliver the knowledge and skills necessary to perform to the standard required. Furthermore guidance is given for each individual standard as to the knowledge considered necessary to underpin performance.

In designing standards based training programmes it is necessary to review the standards and determine:

- what do people actually have to be able to do?
- what underpinning skill and knowledge is required?
- how should the training/learning be accessed by employees?

The intention is to design training programmes which train people to meet the required level of performance, as defined by the national standards. The success of such training can then be evaluated by assessing employees against the standards.

It is hoped that external training providers, such as colleges and training consultants, will design and market training and learning modules based on the standards. In this way organisations will be able to access externally the specific training required by their employees to reduce their "competence gap".

In order to illustrate how the standards may be incorporated in training programmes, Figure 4 presents the outline of the Sourcing module on the Postgraduate Diploma in Purchasing and Supply Management at the University of Ulster. The module is based upon the model underlying the standards and follows the sequence of Units closely. Whilst the module goes beyond the minimum level of knowledge identified in the Underpinning Knowledge to reflect recent theorization and research, it also incorporates practical cases, exercises and simulations to ensure that participants are able to demonstrate competence in key areas. Thus there are exercises on specification, drafting and advertising tenders, and evaluating bids. The module is designed to provide the knowledge base and simulations of key competences in support of work based assessment. It does not by itself replace the need for participants to be in work, but may provide the opportunity for assessment of competences which participants may not have the opportunity to demonstrate in the workplace.

Promotion, Recruitment and Selection

These activities are concerned with choosing staff, either internally or externally, to fill positions within the organisation. It is usually necessary to decide what the job entails, i.e. what the person is expected to be able to do, in order to promote or recruit the right person to the position. Standards can be used to specify what the prospective job holder would be expected to be able to do. The organisation could identify and select the units and elements of competence which reflect required performance for that particular job role and together these units and elements would form the job specification.

Ideally the organisation would want to select individuals for promotion and recruitment who can demonstrate their competence against the units and elements listed in the respective job specification. This would increase the likelihood of selecting the right person for the job. This has many benefits, for example, not having to readvertise the position, minimising the potential for mistakes etc. Until a supply of candidates with the N/SVQs exists organisations will have to use less formal and reliable means of assuring that individuals meet their requirements. This could possibly involve asking applicants for positions to submit a portfolio of evidence against the requirements of the standards.

Motivation

Standards, but more particularly N/SVQs, can have positive effects on employee morale and motivation. Firstly they allow experienced, competent individuals who have no formal qualifications to have their competence recognized and formally certificated. This can have a positive effect on individual motivation. The self-pacing, candidate driven nature of N/SVQs helps in this respect. Secondly the availability of N/SVQs has been shown in some organisations to reduce labour turnover. For example, Boots piloted retailing NVQs in 100 stores from mid-1989 to mid-1990 and found that "the (staff) turnover in the NVQ pilot stores was 14% less than other stores for the same period" (Incomes Data Services 1992:8). Thirdly because N/SVQs relate directly to the workplace employees are more positively disposed to work and undergo training towards N/SVQs. This is partly due to their perception that having an N/SVQ will enhance their value both internally and externally.

Evidence of Uptake

Organisations currently implementing competence based standards internally include Shell International, Rolls Royce and London Underground. Whilst they may not be incorporating all of the PSLB standards directly, these provide a standard reference point from which to develop organisationally specific sets of standards. Others, including British Telecom, National Power and the Post Office have registered as centres for the assessment of NVQs. The standards have also been used as the basis for a Certificate of Competence by the International Federation of Purchasing and Materials Management against which national qualifications will be assessed for their equivalence. To date there are very few candidates actually registered for the N/SVQs. This is mainly because organisations are put off by the costs in terms of payments to awarding bodies and managers' time in assessing candidates, as well as what is perceived as an excessive amount of administration. However the UK Chartered Institute of Purchasing and Supply is exploring a route to professional accreditation based on a suite of NVQs including Purchasing. It is likely that this would provide the incentive necessary for employers and employees to embark on competence based assessment, rather than the traditional knowledge based examination route to professional accreditation.

Conclusion

This paper has outlined the process through which the Purchasing standards and N/SVQs have been developed, with an analysis of their validity and value in the face of strong criticism of both the methodology employed and the underlying concept of competence itself. The argument presented is that despite such criticism, the standards and N/SVQs have validity because they are grounded in practice, and their value will be determined by the extent of their take-up, and the ensuing benefits for the organisations and individuals doing so. Methods by which such benefits may be achieved are outlined, but it remains a matter for empirical research to establish whether the benefits claimed will actually result from implementation of the standards.

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Further details on the Purchasing NVQs and SVQs may be obtained from the Purchasing and Supply Lead Body Secretariat, Easton House, Easton on the Hill, Stamford, Lincolnshire PE9 3NZ, England .

Chapter 6
Job Profiles of Purchasing Professionals

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The goal of this chapter is twofold. First of all it describes the development of job profiles that form the basis of the development of training profiles. This part of the chapter is the description of a real example of the development of these profiles in the purchasing profession in the Netherlands. The methodology that has been employed in this project though is rather universal. Elements of it are used very commonly, also in the studies of Erridge & Perry (1993) and Muller (1992). In this sense the description of the project can serve as an example as to how to develop job profiles as the basis for the development of training program profiles worldwide. Secondly, the chapter analyses a number of problems that arise when developing job profiles along the lines described in the first part of the chapter. This analysis warns the candidate user of the methodology of unanticipated problems.

The purchasing profession is in a state of rapid development. This is partly due to an increasing degree of external purchasing in companies and the increasing importance of the contracting out of services. The importance of the purchasing professional is thus increasing which has consequences for the qualifications of the purchasing profession. This was the reason why the Dutch Association of Purchasing Management contracted the national Institute for Curriculum Development to conduct a study into the job profiles of purchasing professionals.

The goal of the study is not only to gain insight into the various jobs within purchasing, but also to be able to better match the training requirements of purchasers to the needs of the work-field. The study consists of two phases: the first is to develop job profiles, and the second is to develop training profiles. This chapter concentrates on the first phase of the project.

In the first phase the tasks of each of the jobs involving purchasing professionals were inventoried. The result of the first step, the making of job profiles, forms the basis of the second step, making training profiles. Training profiles form a specification of training programs and put the training developers in a position to take practical job requirements into proper consideration. Beginning in May 1993, the Institute for Curriculum Development has conducted the job profile research in cooperation with the Dutch Association of Purchasing Management.

Job Profiles and Job Training Profiles

Job profiles are descriptions of the structure and content of a job. In these descriptions a distinction is made between task clusters and tasks.

In practice, formulating the task clusters and tasks for any job is difficult. A job is for the most part a collection of more or less related tasks. There are tasks which can differ, but there also exist important aspects which are the same for all versions of the job. This is also true for the job of purchaser.

The job profiles form the basis for training profiles. The Training profiles consist of:

- certification units;
- learning objectives;
- content specifications.

The course of the entire project is represented in Figure 1.

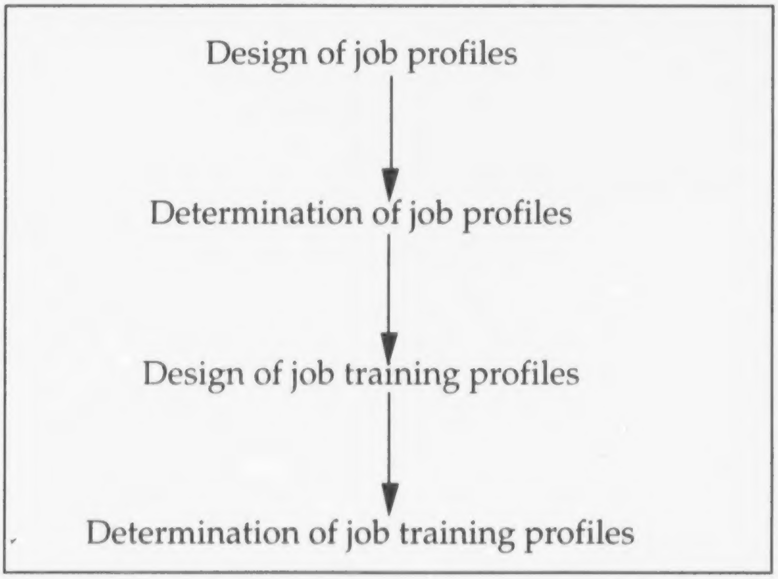

Design of job profiles
Determination of job profiles
Design of job training profiles
Determination of job training profiles

Figure 1. Project components

Job Profile Research

The phases of job profile research are depicted in Figure 2.

The first phase is a literature analysis which surveys the developments in the purchasing work field. A variety of articles are analyzed along with handbooks and research reports. This first phase is followed by an interview round focused on three groups.

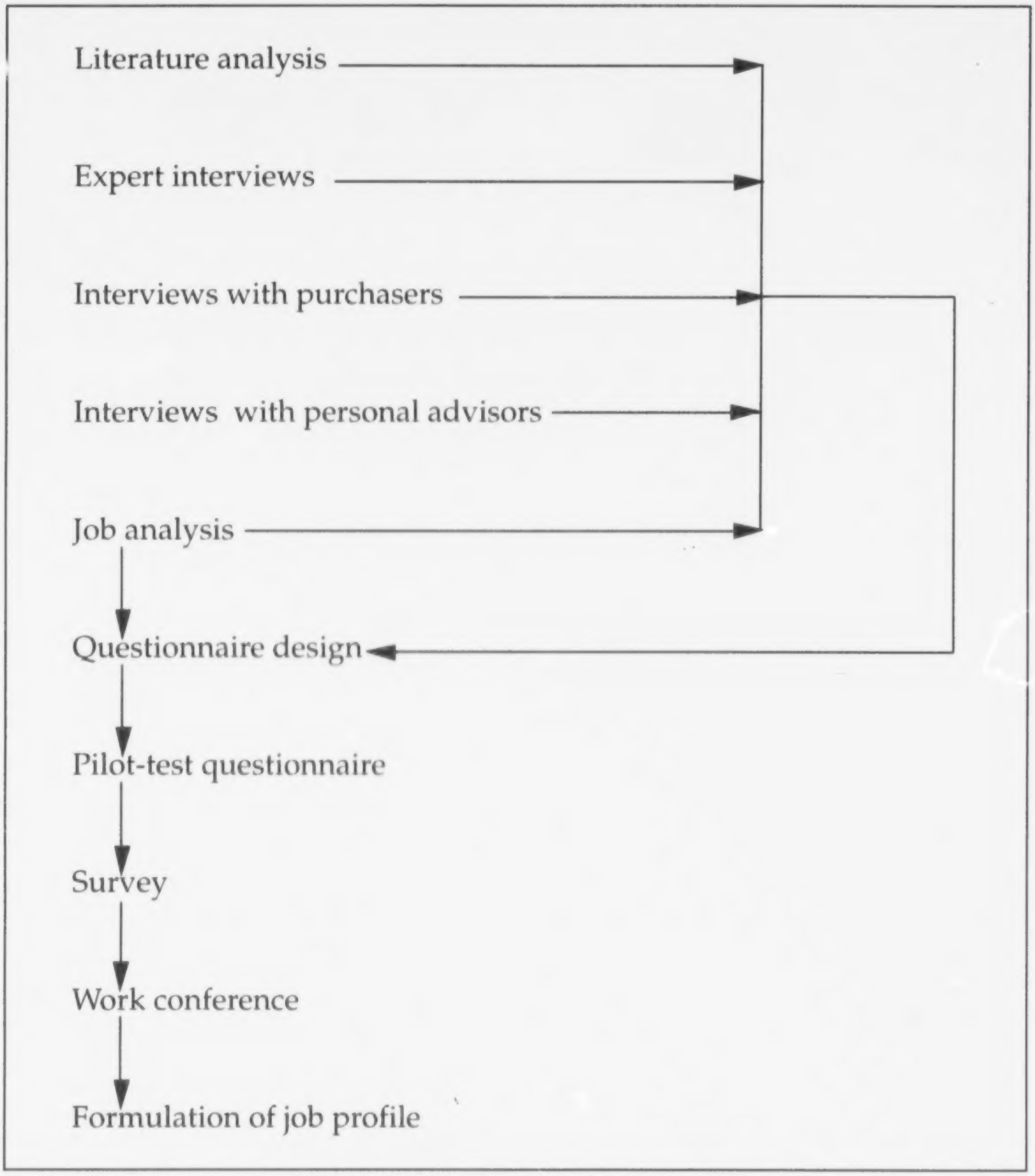

Literature analysis
Expert interviews
Interviews with purchasers
Interviews with personal advisors
Job analysis
Questionnaire design
Pilot-test questionnaire
Survey
Work conference
Formulation of job profile

Figure 2. Components of the job profile research

- *Experts.* They are interviewed about the developments in the purchasing work field and the possible consequences of these developments for the organization of the purchasing function and the tasks and responsibilities of purchasers at several levels of the organization.

- *Purchasers.* They are interviewed about their own position in the organization, the structure of the purchasing function which they presently occupy, the tasks and responsibilities and the developments which occur in these clusters. They are also asked about the possible consequences of change for their tasks and responsibilities.

- *Personnel advisors.* They are interviewed about the structure of the purchasing function in their organizations, the personnel who occupy these functions, and the job descriptions of the different categories of jobs and the relevant job requirements.

The job descriptions are also asked for in other interviews. These job descriptions play a role in the analysis of the various purchasing jobs.

The interviews formed the basis of a questionnaire. In the questionnaire a large group of purchasers were asked about the tasks which they performed in their jobs. In preparation for the structure of the questionnaire, an overview of the purchasing task clusters was presented to those interviewed. This overview and therefore also the structure grew out of the interviews. The division into function level and sectors also came about in this way. Building upon the task clusters within purchasing (see Table 1), 283 tasks were formulated. After it was evaluated by a number of experts, the final form of the questionnaire was produced.

Task Clusters And Tasks

The task clusters for purchasing are listed in Table 1. The number of tasks per task cluster is given between parentheses. The description of the task clusters is the first rough description of a job. This description can be refined by separating the task clusters into individual tasks. Because of the size of the task list, it is not possible to print it here. As an example, the description of the tasks is task cluster, 'the specification of purchasing demand', is given in Table 2.

An accurate representation of the groups of purchasers is essential for the research. It is important to have sufficient participants from the different sectors (trade, industry, public administration, health care) and from different levels within those sectors. In order to ensure sufficient participation, 3000 purchasing managers in The Netherlands were asked before the questionnaire was developed to participate in the research. It was also requested that at least one representative of every purchasing level in each organization be completing the questionnaire. On the basis of earlier research and the expert interviews, a distinction is made between: the purchasing manager, senior purchaser, purchaser, purchasing assistant and supporting personnel. The preparatory research supported these distinctions. However, not all of the levels are present in small and medium sized organizations. It was also noticed that the trade sector was under-represented. Precisely because purchasing is very important in this sector, a trade organization which had not previously been approached was asked to participate. The organization agreed with this request. The registered participants were each sent a questionnaire, 415 of which were eventually completed and returned. In connection with the reliability level of the sample, it had previously been determined that a minimum of 10% should respond. This percentage is clearly exceeded.

Table 1. Task Domains Of Purchasing Professionals

1. Purchasing policy development (33)
2. Management of the purchasing department (51)
3. External communication about purchasing (12)
4. Internal communication about purchasing (16)
5. Conducting market, environment, and strategic research in the domain of purchasing (11)
6. Making purchasing plans (19)
7. Evaluating purchasing policy (8)
8. Obtaining goods and services
    - 8.1 Analysis of the internal environment concerning purchasing (11)
    - 8.2 Specification of purchasing demand (25)
    - 8.3 Selection of providers of goods and services (27)
    - 8.4 Contracting delivery services (6)
    - 8.5 Ordering goods and services (8)
    - 8.6 Supervision of delivery (6)
    - 8.7 Responsibilities after delivery (6)
    - 8.8 Administrative completion of purchase activities (22)
9. Increasing quality of purchasing activities (8)
10. Personnel policy regarding purchasing employees (14)

Frequency And Interest Profiles

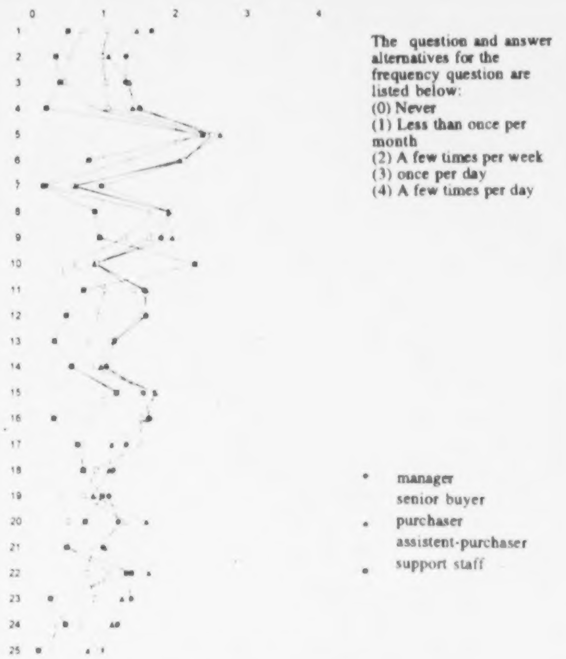
In the questionnaire, it was asked how often each task was performed and what the importance was of the task within the overall job. The respondents' expectations about developments in the work-field in the near future were also asked for.

The results of the job profile research were processed in a number of ways. In connection with the large amount of available data, it was chosen to develop frequency and importance profiles. These profiles give the average score for each task. Frequency profiles and interest profiles were made for job level and business sector. In this way four profile groups were constructed (examples are given in figures 3 to 6).

Table 2. Task List Of Task Domain 8.2 "Specification Of Purchasing Demand"

1. Analysis of purchasing requirements to determine whether they match the organizational demands
2. Analysis of purchase orders for adequate authorization
3. Analysis of purchase orders to determine whether they fulfill the necessary laws, rules, and procedures
4. Analysis of the purchase orders against the background of the budget of the requester and the organization
5. Giving information about goods and services to internal clients
6. Giving advice about potential suppliers concerning specific purchasing demands
7. Evaluating orders from a legal perspective
8. Discussing alternatives for the requested goods and services from the perspective of the organizational interests
9. Negotiation with the internal client about specifications of purchasing needs
10. Recording the arguments why certain goods and services must be bought outside of the list of preferred suppliers
11. Coming to agreement about specifications with users
12. Determination of quality criteria with respect to delivery
13. Determination of quality criteria with respect to packaging
14. Determination of criteria regarding material handling
15. Determination of criteria regarding cancellation of delivery
16. Formulation of specifications for purchasing
17. Recording parameters of order size
18. Recording of optimal amounts (EOQ)
19. Making connections between technical developments and delivery policy
20. Registering details of purchasing demand
21. Evaluating alternative supply possibilities
22. Planning delivery times
23. Together with others in the organization, making specifications for new purchases
24. Conducting internal marketing regarding standard goods and services
25. Participating in make-or-buy analyses for certain products

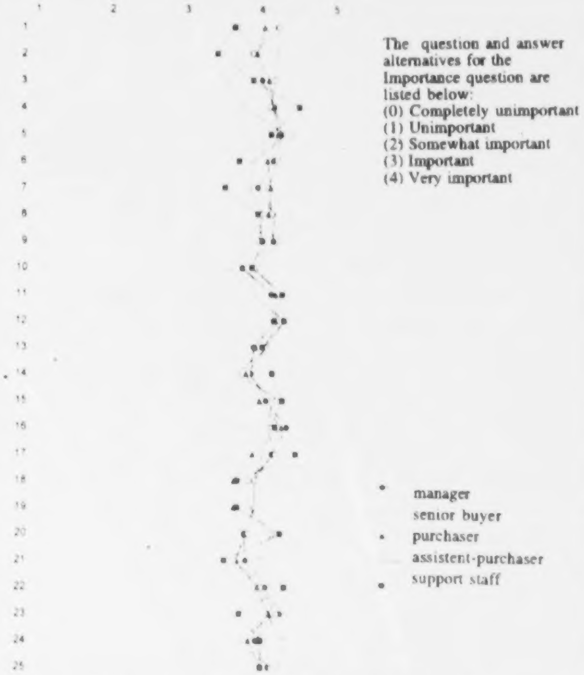
Figure 3. Frequency profile of the task 'Specification of purchasing demand' according to purchasing function.



The question and answer alternatives for the frequency question are listed below:
(0) Never
(1) Less than once per month
(2) A few times per week
(3) once per day
(4) A few times per day

In the left collumn is the task number (see table 2)

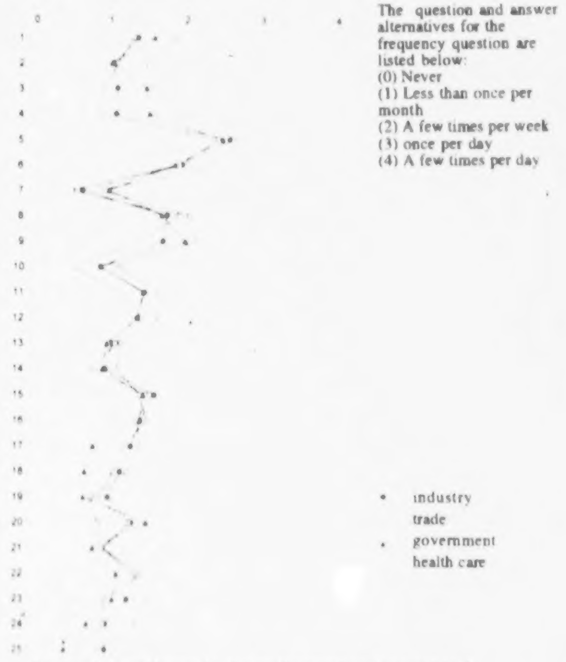
Figure 4. Importance profile of the task 'Specification of purchasing demand' according to purchasing function.



The question and answer alternatives for the Importance question are listed below:
(0) Completely unimportant
(1) Unimportant
(2) Somewhat important
(3) Important
(4) Very important

In the left collumn is the task number (see table 2)

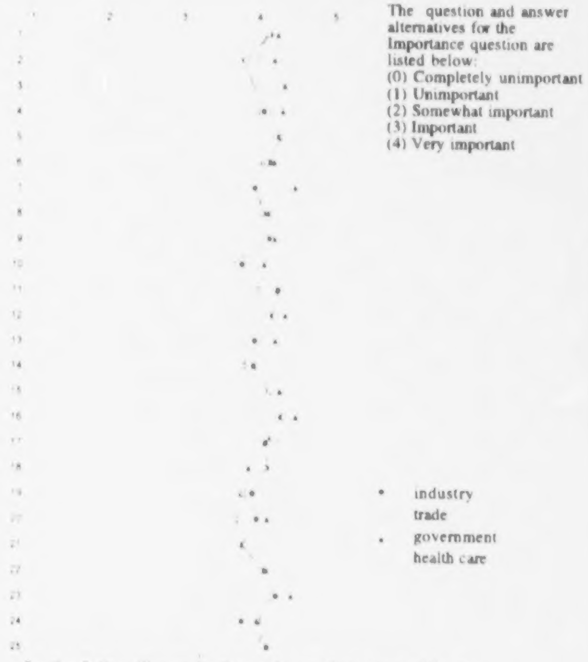
Figure 5. Frequency profile of the task 'Specification of purchasing demand' according to business sector



The question and answer alternatives for the frequency question are listed below:
(0) Never
(1) Less than once per month
(2) A few times per week
(3) once per day
(4) A few times per day

In the left collumn is the task number (see table 2)

Figure 6. Importance profile of the task 'Specification of purchasing demand' according to business sector.



The question and answer alternatives for the Importance question are listed below:
(0) Completely unimportant
(1) Unimportant
(2) Somewhat important
(3) Important
(4) Very important

In the left collumn is the task number (see table 2)

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Working Conference

The fact that the tasks for the different job categories and different sectors have divergent meanings, makes interpretation of the statistical data more difficult. Therefore, a work conference with 14 experts in the purchasing field was organized in order to solve this problem. The methodology employed here is based on experiences with curriculum conferences, which is a group technique in which a panel of experts validates the results of a front-end study. This technique is studied thoroughly, and the results of these studies are made available in various publications (Mulder, 1989, 1991, 1992, 1994; Mulder & Thijsen, 1990). This work conference consisted of a group of experts in the field of purchasing who had been invited to critically examine the preliminary results of the research. The group was put together in such a way as to achieve even representation of the various sectors. The researchers presented the results of the research to the work conference. The participants were asked to state, per sector, which tasks belonged in the job profiles of the five different levels of purchasing professionals. They were also asked to further specify the meaning of each task.

In subgroups, which each contained a minimum of one representative from each sector, parts of the results were discussed. In a meeting of the entire conference the controversial items were discussed, along with amendments to the results which some groups had suggested. The participants in the conference based their actions upon the final goal of the conference: the creation of specifications for training programs. This point was examined during one of the discussions. The discussion led to the conclusion that the conference should give an answer to the question what requirements organizations have with regard to the purchasing function. This forced the participants to examine the results extremely critically. The subsequent question was about what purchasing professionals say about what they do (which is expressed in the research results) and, with consideration of future developments, what they should be doing. This all led to discussions, in which the differences between sectors, as well as within sectors, were expressed. On the grounds of the work conference the job profiles were adjusted.

Results

It is not possible to discuss all of the results here. We will discuss a few main points, and the most important results for some of the task clusters will be discussed here. A few general conclusions will be discussed first.

The frequency scores are on average lower than the importance scores. That indicates that the purchasers performs certain tasks which they find quite important very seldom. The differences in the average importance scores between the job categories and between sectors is mostly very small. However, the differences in average frequency scores between job categories and between sectors are much clearer. The differences in average frequency score between job categories are much larger than the differences in average frequency scores between sectors. The scores for the different sectors show great similarity. This conclusion is not very surprising. Research in other countries has shown similar results (see Muller, 1992).

The differences between sectors for a number of task clusters follows below:

- *Purchasing policy development*
  Many tasks in this task cluster receive less attention in public administration than in the other sectors. Lower frequency scores can be found for the following aspects:
  —formulation of purchasing policy;
  —determination of the purchaser's own market position;
  —recommending and/or implementing changes in purchasing policy;
  —evaluating market developments;
  —matching purchasing strategies with market developments;
  —giving advise about structural cooperation agreements.

The research did not seek to explain these differences; however some comments can be made about this result. In the first place a number of differences can probably be explained by the nature of the government organizations. In the second place, the public administration category is very diverse. The category range from small water utilities and local administrations to large national ministries. The degree of external purchasing varies strongly, even between ministries. Further analysis of these data can lead to a more detailed picture.

- ***Management of the purchasing function***
  Within this task cluster a number of tasks of the trade sector are strongly represented. For this sector the performance of competition-analyses, the interpretation of the results of these analyses, and examination of problems experienced by external clients, are all common activities.

- ***External and internal communication about purchasing***
  This cluster also shows the trade sector purchaser's involvement with the client market. Making proposals for clients and discussing advertising campaigns with the marketing department are examples of this.

  The communication with specialists about ordering specific goods scores lower for trade than for other sectors. Apparently the trade sector purchaser is a specialist in the area of the goods which he purchases. The health sector scores the highest in this regard.

- ***Conducting market, environment, and prospective analyses***
  The direct relation of the trade purchaser to the client market is shown here.

- ***The specification of purchasing demand***
  One prominent aspect is the analysis of purchasing requirements in order to determine if they comply with the necessary laws, regulations, and procedures. This cluster is more prominent in the health sector and in public administration than in the other sectors. This is also the case for the application of regulations and procedures in order to comply with laws about safety, health, and the environment. Both sectors also score higher for the analysis of purchasing requirements with regard to the budget of the requesting person and organization.

- *The creation of purchasing plans* and tasks which are related to this seem to have received more attention in the past six years. In any case, this is true for the health sector that—in contrast to the conclusions of the research 'Professionally purchasing Netherlands' (Stearing group purchasing development, 1987)—the purchasing managers spend more time on the production of purchasing plans.

The similarities between the sectors appear to be greater than the differences. The job has a clear purpose: the development, maintenance, and expansion of relations with the suppliers' market in order to ensure that the purchasing requirements of the organization are met in the long-term.

The results of the research form a good point of departure for the creation of the training profiles in the following phase of the research. Through this working method it has been possible to adequately match training with the practical reality of the professional purchaser.

Critical Analysis

During the past ten years, working with training profiles has become popular. Task, function, professional, and group profiles now form an important basis for post-secondary vocational training programs, professional organizations, and human resource development.

For instance, in the innovation of post-secondary vocational education, thinking in terms of job profiles is further emphasized. Business sector-based negotiation committees within business and job training receive the task of developing job profiles for all training programs on the basis of which training profiles are formed. Business sector organizations also used these profiles in order to revise their training programs.

Furthermore, professional organizations also put a great deal of energy into the creation of profiles. The best known examples of this in the field of training and development are the American Society of Training and Development, the International Board of Standards, and the Training and Development Lead Body (Mulder, 1993). Apart from training profile development, the functions of the profiles which have been developed by the professional organizations are twofold: qualification and self development. Qualification indicates that the authority of the professional is recognized by the organization. In this sense the profile is used as a testing criterion. However, this testing is not performed by the organization, but by a recognized training institution. These training institutions must ensure that the training programs meet the criteria of the professional organization. Self development indicates that the profiles can be used for personal self development. Using the criteria and norms contained in the profiles, the training professional can identify his or her own strong and weak points. On the basis of this information one can create and follow a personal professionalization plan, for example by asking for directed feedback from a personal advisor or by following workshops or courses. Although the nature and function of the profile in the above situations differs, they are all concerned with performance profiles in which the relation between performance requirements and professional skills are expressed.

These profiles are used as a basis for the development of training programs, the evaluation of professional skills, and the intentional development of personal expertise. This indicates that much importance is put upon profiles.

Finally, many large (international) firms have also started to work with profiles, for instance for their trainers. Trainers in departments spread around the world need to react to at least two dominant cultures, namely that of the country where the head office is located and that of the local country. In order to create minimum standards for the expertise and capabilities of the trainers, general function profiles can be made that lay out tasks, responsibilities, necessary qualifications and possibly additional training requirements.

The development of good profiles that form a basis for training programs is however not easy. Their validity is often questionable. The question in this sense is: do job profiles form an appropriate picture of a task or job? In other words: are they good enough to perform the above-mentioned functions? There are many difficulties that threaten the validity of training specifications. A number of these problems will be pointed out which have become apparent in the development of the job profiles in the purchasing project. These problems however also appear in comparable projects for other training programs.

The issue of the validity of job profiles is important as the training content is being based on this profile. The job profile should adequately reflect the job structure and the job content. Also, the training content should adequately reflect the profiles.

An example should clarify this relationship. If an analysis of the job structure and content shows that purchasing professionals conduct many activities in the area of purchasing policy (for example, with reference to the determination of ones own market position and the adjustment of purchasing strategies to market developments) then this should appear in the job profiles, as well as in the training programs.

Validity threats

The validity of the job profiles are threatened by a great number of factors which have to do with the way in which this kind of research is conducted. The problems which occur can be summarized under the categories 'sampling', 'instrumentation', 'response', 'data analysis', and 'synthesis'.

Sampling

Profile development usually begins with a questionnaire among profile representatives. In the domain of purchasing these are, for example, purchase managers, purchasers, assistant purchasers, and support staff in the purchasing department (Mulder & Bellemakers, 1993; 1994). The greatest problem in sample selection is that precise data about the population are usually unavailable. That is certainly the case for government and business sector-based training, but also within business training, for example concerning the earlier mentioned international training programs within multinational firms. The head office often does not have a precise picture of the potential target audience of a particular training program. The different subcategories of the population that are important for the profiles are not necessarily known, and the distribution of the profile representatives across the categories is also not usually known. Along the same lines, the different professional organizations have data about their own members, but not about those who are not members of the organization. Further, they often do not know how their members are distributed across the categories that are important for the profile development (for example, the business focus or the business size). A related phenomenon is that there is usually no overall database of representatives which is structured according to the relevant categories. This leads to the problem that the representativeness of the sample in such cases cannot actually be determined.

Instrumentation

The development of job profiles often makes use of task lists. These task lists are included in the profile representatives' questionnaires. Among other things, the frequency and importance of the conducting of the tasks are determined, per task. The construction of such task lists leads to diverse problems. Firstly, problems with regard to the completeness of the list. It is often not possible to determine whether the list contains all of the important tasks. That can be dealt with by including an open question asking for important tasks which were not included. However, experience shows that because of the large size of most task lists, few extra tasks are formulated. This can in principle indicate one of two things: either the respondents actually find the list to be complete, or they do not wish to go to the trouble of formulating extra tasks. Secondly, there is the problem of the variation in aggregation levels of the task areas and tasks. A particular task area can, for example, be defined as being at a higher level than another, as a result of which far more tasks fall within the first task area than within the second. The same is true for the tasks themselves. Thirdly, there is usually a low degree of exclusivity between tasks within a task area. In some cases tasks might be positioned within several task areas. For example, a task such as writing reports can occur in several different phases of the purchasing process, but also in the management of the purchasing department, the development of purchasing policy, or the evaluation of purchasing results. Fourthly, task lists are usually characterized by a significant amount of semantic decontextualization. This means that tasks in task lists often have an isolated position. The connection between the task and the task area is often only clear when the task execution is placed in a specific context. This context is often the reference point for the meaning of the question as to the frequency and importance of the task. For example: 'closing purchasing contracts' has a completely different meaning when strategic purchasing is performed than when regular orders are made to fulfil organizational needs. Because much profile research is conducted by researchers and developers who are not experts in the relevant work fields, the seriousness of this problem is not always recognized. However, if we take an example which falls under our own work field, then the consequences of this problem become painfully apparent. One can think for example about the task 'the determination of training objectives', which on the surface seems easily interpretable. The context of the task can be varied by imagining two situations in which the training objectives must be determined. The first context is a individualized language course for purchasing professionals in East Asia. The second context is management training for senior executives in the framework of a cultural change within the organization. The determination of the training objectives is completely different between the cases. The competencies which are necessary in order to determine the training objectives also differ between the cases. Which means that the training for learning how to determine training objectives also differs in each case.

Data collection

Task lists are mostly completed by the profile representatives themselves. There is little known about the validity and reliability of the data that are acquired in this way. It is known that introspective techniques bring some problems. The respondents are usually those who voluntarily participate in the research. Their expertise with regard to the tasks which are included in the task lists, as well as their competence to objectively reflect on the list, are difficult to determine ahead of time and therefore are for the most part unknown. Little or no research has gone into how these factors influence the results of the profile research because in most cases the limited resources of this kind of research preclude systematic non-response research.

Data analysis

Tasks are usually assessed for the variables 'frequency' and 'importance'. The frequency with which profile representatives perform tasks is generally considered to be insufficiently informative. Sometimes tasks are only performed very seldomly, but at the moment that they occur they are exceedingly important. In the health care sector there are many examples of this sort of task. Much of the work of nurses consists for example of routine activities of moderate importance: making beds, washing patients, and supporting the daily activities of the patients. However, in serious emergencies, which do not occur as often, they must act effectively and efficiently. This is why it is usually recommended to make a combination of frequency and importance scores. Unusual but nonetheless very important tasks therefore receive a higher weighting than unusual and unimportant tasks. There is much to say for this principle. From this profile study on purchasing (and also from other research) however, it appears that the average importance score for tasks is high and that little discrimination exists between the average scores for the stratifying variables such as 'job category' and 'business sector'. This throws another light on the recommended combined importance and frequency score. Under such conditions the combined score is not very meaningful.

Synthesis

The result of the job analysis is a job profile, usually a systematically ordered list of duties and tasks, sometimes with explanatory comments to aid the proper interpretation of the overall profile. There has been little written in the literature about the criteria for task inclusion. It is clear that this process involves normative decision making about empirically gathered research results. In practice this decision making usually takes place in training departments, committees, project groups, and other advisory bodies. In the purchasing profile project, guided deliberation was used to correct for uninterpretable research results, to obtain recommendations regarding the inclusion of tasks in the job profile, to specify the meaning of the formulations, and to bring contextual and functional differentiation to the tasks. Experience shows that this method leads to a greater degree of validity in the profiles.

Conclusions

As has been shown, there are many validity threats which can lessen the value of profiles for the development of training programs. Is there then no hope for the profile users? Does this mean that all of the training programs have suddenly become worthless? I would not go that far in my conclusions. What occurred in the purchasing training profile project with the results of the profile study, occurs in most other projects: a group of experts evaluate the results and interpret these in light of the way in which the study was conducted. As one learns from the problems which arise in the research, the job profile must to some degree be corrected. This method indicates that the evaluation of the validity of the job profile is given to groups of experts who have been brought into the project. Whether they answer the question in a correct way is strongly dependent upon the quality of the facilitation of such groups. In this respect a pure technical-rational analysis of the job profile is insufficient. It is much more a case of interpreting the available information against the background of the relevant training policy and ongoing developments. I have earlier referred to this interpretive method with the term curriculum deliberation (Mulder, 1992). It is an investigative way of decision-making about training content, in which preferences are articulated and deliberated upon. It is the argumentation process of a group of people, directed towards the resolution of curriculum content problems and reaching consensus, in which alternative solutions are weighed and the group is aware of the possible consequences of the various alternatives (p. 262). In the transformation of job profiles (the functional requirements) into knowledge and skills (the training content) various factors play a role. Based upon the views on training and development and the cultural and social perspectives which form their basis, and upon insights from the scientific fields that are relevant to this transformation process (among which are the concerned work field, as well as curriculum theory and social psychology), a process takes place of interpretation, explanation, illustration, and specification of the meaning of the job profile. By this process consensus is created about the content of the training.

I find that profiles can play an important role in this, but only if they are sufficiently valid. If these problems do not receive enough attention during profile research and if no sufficient solution is found for the problems that are experienced, then a profile is not worth very much and I would not rely very heavily on this profile when determining training content. However, if profiles have been carefully composed, and if the problems which have been experienced have been sufficiently dealt with, then they are a powerful tool on which to base training content choices. In this case they give a good basis for the further development of training programs. My final conclusion is: profiles are worthwhile if they are the product of careful research and if the products of the research are carefully interpreted. In this case, the use of a job profile is recommended as a powerful instrument for increasing the validity of training content and consistent training programs.

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Part III — New Trends and Challenges

Chapter 7
Basic Skills: An Approach to Occupational Classification

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Summary

The nature of the workplace is changing in substantive ways worldwide. Most OECD countries have recently attempted to revisit national standards for both education and training in order to create more flexible labor forces that are internationally competitive. In the U.S.A., that revision refers increasingly to those basic skills that equip individuals to perform and learn a range of competencies within a spectrum of occupations. The resulting flexibility, and the skills it demands, may form the basis for a new way to classify occupations.

To change the way occupations are conceived naturally changes the way they are learned. Achieving broad-based skills that are transferable across domains and entire occupations will necessarily blur the lines between academic education and training, making training not simply a way to acquire specific skills, but a way to learn to think in specific settings. These changes will likely have profound implications for labor markets, and education and training systems.

The National Job Analysis Study (NJAS) is a national effort in the U.S.A. that identifies basic skills as those that cut across different occupations or sectors. It brings new dimensions to the issue of basic skills and of assessment. First, the basic skills are no longer conceived as a fixed set of skills, but as an evolving concept that varies with the level of occupational proficiency, technological advancement and with patterns of work. Second, the concept is not limited to low-level, uneducated workers, but applies to workers at all levels. It refers to complex skills requiring the use of information, knowledge, and the intellectual, social, and practical skills necessary to a concrete work situation. Third, it takes into consideration domain or content-specific boundaries to identify and teach such skills. Thus, the NJAS approach suggests ways to maximize the transfer of the newly defined basic skills to new situations while pointing to the important of context and to boundaries within which such transfer is likely to occur. This is perhaps the fundamental difference in the understanding of basic skills, and one likely to profoundly influence current ways to conceptualize education and training, as well as learning and transfer of learning issues. Fourth, and as a consequence, the approach suggests that assessments go beyond mastery of current skills, and attempt to predict an individual's ability to transfer that skill to other occupational domains.

Finally, these new dimensions imply that basic skills can no longer be obtained through conventional schooling alone. As the nature of work becomes more conceptual and abstract, the workplace becomes a privileged place to teach such basic skills, offering opportunities for embodied learning and for meaningfully applying and transferring what has been learned. It is becoming clear that

what improves worker productivity is not simply the mastery of a task, but an enhanced ability to learn. In practice, as is already happening in knowledge-intensive firms, working experiences are becoming learning experiences, with working and learning hardly separable.

To the extent that those trends are true, and knowledge and learning capacity are critical to productivity, new occupational classifications will need to take into account such new dimensions. The NJAS approach may become a powerful tool to redefine the basis of the new occupational classifications.

Introduction

The nature of the workplace is changing in substantive ways worldwide. Many OECD countries have recently attempted to revisit national standards for both education and training in order to create more flexible labor forces that are internationally competitive. The trend which has been evolving in the last 25 years in the U.S.A. is still on the rise. This paper focuses on one of the fundamental elements of this response—the identification of the basic skills needed for work performance. As the result of accumulated experience of dealing with the issue, basic skills are redefined and acquire new dimensions. They increasingly refer to those skills that equip individuals to perform a range of tasks within a spectrum of occupations. But they also refer to the ability of individuals to learn the tasks and to transfer acquired knowledge and experience to new situations. The resulting flexibility, and the skills it demands may form the basis for a new classification of occupations, based on competencies and basic skills which are generic and generalizable within a range of occupations or tasks.

Underlying the concern with standards is the increasing realization that skills improve productivity, particularly skills that increase flexibility in the workforce. In order to understand whether, how, and to what extent workers' competence affects their productivity, studies of schooling attainment and earnings will not answer the question. The reason is that the knowledge, competencies and skills involved in the schooling process are too generic and too far removed from concrete work situations (Stern and Tuijnman, 1992).

To change the way occupations are conceived naturally changes the way they are learned. One main advantage of an empirically derived list of basic skills is that it requires new thinking not only about how skills are effectively used in the firm, but how and where they should be effectively taught. Achieving broad-based skills that are transferable across domains and entire occupations will necessarily blur the lines between academic education and training, making training not simply a way to acquire specific skills, but a way to learn to think and effectively operate in specific settings. These changes will likely have profound implications for labor markets, education, and training systems.

Basic skills redefined

In the U.S.A. the term basic skills usually refers to elementary, fundamental, basic skills such as the ability to read, write, and make simple computations. As societies shift to knowledge-based economies, that traditional definition becomes challenged. Citizens and the labor force must be equipped with an increasingly broad and changing sets of skills.

New standards for basic skills signal new requirements for employment in the labor market. In fact, revision of basic skills began with employers and governments voicing dissatisfaction with the job performance of graduates and drop-outs from education and training systems, and they related this dissatisfaction to a lack of proper literacy. The concern was summarized in an OECD document, *Adult Illiteracy and Economic Performance*: " . . . it is not that schools are turning out demonstrably less literate graduates than in the past, but that the ways in which adults need to apply literacy skills are becoming more demanding . . ." (OECD, 1991, p. 7). In the U.S.A., and particularly since the appearance of the document *A Nation at Risk*, workforce literacy surveys, testing, and compensatory education programs have been developed at a brisk pace (U.S. DOL, 1992). Literacy assessments undertaken in a handful of other countries have since confirmed that measures of completed schooling are, at best, poor substitutes for direct assessments of worker skills (Stern and Tuijnman, p. 6).

The first national attempt to re-open the issue of basic skills on a broader basis was the (Labor) Secretary's Commission for Achieving Necessary Skills (SCANS). Even though the list of basic skills proposed as national standards in the SCANS report represented a major departure from conventional lists of basic skills, it still had a number of problems which limited its usefulness. Box 1 illustrates some of the typical basic skills proposed in the SCANS report.

One of the problems stemmed from the fact that the skills in the SCANS list were derived from authoritative "wish lists" rather than from empirical job analysis. This made the skills difficult to relate to concrete work situations and thus practically unusable for meaningful assessment. While schools may have been encouraged by the SCANS list to provide more work-related examples when they taught general concepts, they were still too abstract to ensure any meaningful transfer of learning to a large array of concrete situations. For example, learning to "problem solve" in a general way (a higher order skill schools attempt to develop in abstract or generic ways) is not helpful for a mechanic facing an oil leak. This quality may explain why applications of the SCANS recommendations seem more attractive to some education circles than to the training sector. This naive approach to basic skills also reinforces the trivialization and downgrading of the concept, as it limits it to the conventional expectations of any acceptable process of primary schooling.

Moreover, SCANS did not overcome the central barrier in communication between employers and educators. Employers seldom articulate their needs in ways educators can understand, and educators rarely respond satisfactorily. The difficulty, in part, stems from the fact that employers really do not know their needs, much less which skills are more appropriate. For their part, educators still lack a satisfactory theory of learning and learning transfer to help identify how far general skills can travel, and what are the best predictors of trainability. As a result, basic skills such as those defined by the SCANS report tend to be too general and do not lead to useful, practical applications. Yet, as employers start to appreciate the value of the ability to learn over the current mastery of specific, narrowly defined occupational skills, clearer messages can be sent to education and training institutions about the ways workers should be educated and trained.

BOX 1: Workplace Know-How

The know-how identified by SCANS is made up of five competencies and three categories of foundation skills that are needed for solid job performance. These are:

WORKPLACE COMPETENCIES: Effective workers can productively use:

- *Resources* - They know how to allocate time, money, materials, space, and staff.
- *Interpersonal skills* - They can work on teams, teach others, serve customers, lead, negotiate, and work well with people from culturally diverse backgrounds.
- *Information* - They can acquire and evaluate data, organize and maintain files, interpret and communicate, and use computers to process information.
- *Systems* - They can understand social, organizational and technological systems; they can monitor and correct performance; and they can design or improve systems.
- *Technology* - They can select equipment and tools, apply technology to specific tasks, and maintain and troubleshoot equipment.

FOUNDATION SKILLS: Competent workers in the high-performance workplace need:

- *Basic skills* - reading, writing, arithmetic and mathematics, speaking and listening.
- *Thinking skills* - the ability to learn, to think creatively, to make decisions, and to solve problems.
- *Personal qualities* - individual responsibility, self esteem and self-management, sociability, and integrity.

Source: US-DOL. What work requires of schools. A SCANS report for America 2000. Washington, DC: U.S. Department of Labor. The Secretary's Commission for Achieving Necessary Skills, June 1991.

To overcome some of the methodological shortcomings of the SCANS and other previous approaches to basic skills, the U.S. government has sponsored parallel but complementary activities. One initiative attempts to redefine occupational skills in the various trades, through the Business and Education Standards Programs of the Department of Education (U.S. DOE 1992-1993). A similar, ancillary initiative focuses on strategic economic sectors and is sponsored by the Department of Labor. These studies will lead to a set of general, technical, and basic skills common to a range of occupations within broadly defined sectors. Comparable to recent developments in such countries such as Germany and Austria, this new approach to basic skills may dramatically reduce the number of occupational classifications.

The other initiative is the National Job Analysis Study (NJAS), a nationwide effort to identify general basic skills that cut across different occupations or sectors. It grew out of the SCANS work to date, and is designed to identify cross-occupational behaviors, skills, and knowledge. While the studies described above will be looking into general and technical skills common to a cluster of occupations, i.e., those skills which make one cluster different from another, NJAS will be looking for behaviors, skills, and knowledge that are common across different clusters. The study states: "Traditional job analysis gathers information on all the behaviors inherent in a particular occupation and determines what it is about that occupation that separates it from all others. The traditional outcome highlights the differences among occupations. The National Job Analysis study uses the same methodology to gather information on what job behaviors are similar across a wide variety of occupations. The 'generic' focus of the study illustrates the dynamic nature of today's jobs and reflects how critical it is for workers to have generalizable skills they can apply as changes occur within and across organizations and occupations" (ACT, 1993, p. 1).

These cross-occupational skills are considered basic skills. They are broader from both theoretical and practical points of view because the skills are generalizable across occupations and are common to 80% of the workers in the labor force. Moreover, these basic skills can be rearranged for different occupational categories and levels of performance, based on their frequency and on importance to job performance. With this kind of range, the issue of basic skills is no longer restricted to basic literacy skills, much less to the lower end of the workforce. Skill needs are analyzed for all levels of the workforce. The approach is also forward-thinking. It takes into account rapid changes in occupational profiles that demand individuals to further their own learning.

To accomplish the combination of cross-occupational skills that are applicable to specific settings, the NJAS simultaneously expands and narrows the concept of basic skills. It expands the concept by testing the applicability of similar skills in clusters of occupations. The behaviors are checked for importance and frequency of use. A total of 221 common behaviors has been initially identified, for example, "consults reference manuals", and "uses tools to adjust equipment" or "analyzes operation of equipment".

At the same time, NJAS narrows the concept of basic skills by linking the cross-occupational skills to the actual contexts or occupations in which they are used. "Analyzing the operation of equipment" would be tested differently in the case of a mechanic than that of a plumber. Different levels of skills will be required from an operator, as opposed to a maintenance mechanic or an engineer.

Once basic skills are identified, standards will be derived for various occupational clusters, training materials will be developed to teach the required skills in various concrete contexts. Assessments will also be developed, including standards and tests for four different proficiency levels. A general skill such as "informs clients and customers" could be assessed at different levels, such as "directs customer to location of product or service,", "matches customer needs to a specific product or service," "informs customer about features/operations of a product/service, or "compares and contrasts products or services provided by own vendor and outside vendors" (Korte and Nash, 1994 p.2).

Ultimately, the new approach assesses whether general skills are effectively applied and it tests the range in which they can be effectively transferred to the world of work. The implications are clear. While the NJAS approach identifies the broadest possible range of transferability of basic skills required of the majority of the workforce, at the same time it points to the limits of transferability by situating and testing skills at the same conceptual or taxonomic level, but within the concrete context in which they are used. For example, informing clients requires a different information basis and skills whether one is dealing with records or meat. The same is true whether one is fixing an electronic or a mechanical lathe. What the NJAS approach does is to simultaneously clarify the limits of what is generalizable while pointing to the role of information and domain-specific content and structure. The issue is no longer to acquire trivially defined and presumably all-encompassing skills such as "being able to solve problems", but identifying what it really takes to troubleshoot a specific malfunctioning piece of equipment, and a range of other problems that can be solved with the application of knowledge and skills necessary to perform a concrete task. The results of the ongoing efforts will bring about important implications for job classification, training, and education. But they are also likely to have profound theoretical implications for learning and teaching theories.

Transfer of Learning

A unique feature of the NJAS approach is that general, basic skills are identified in specific contexts of work, and both the generic and the specific aspects of the skills and competencies involved are simultaneously taken into account. The different problems solved by a technician or a salesperson are concretely identified, so that they can be properly assessed, tested and taught. Even though problem-solving abilities may have something in common at a very general level, what matters for employers is an individual's ability to solve concrete problems related to work, not a general, only presumably transferable problem-solving ability. Skills viewed this way involve possibly two levels of complexity. Some higher-order skills might have a number of elements in common. For example, general academic pre-requisites like those traditionally taught at elementary schools or even general rules on how to attack a new problem in mechanics or electronics, how to take notes during a lecture or a quality control meeting, or basic rules about technical translation in English or French may require some of the same skills. But these commonalties may be too general to serve any practical goal. Individuals do not learn abstract translation principles or how to solve customer problems or electronic problems in a general course on problem solving. They need to learn how to approach them in concrete ways. Planning or problem-solving works much differently when you are trying to plan a day's activity or dealing with urban planning issues, or when you are trying to fix a digitizer as opposed to "fix" a problem with a fellow worker's attitude.

Thus defined, basic skills cannot be meaningfully learned and taught in the typical context of a general secondary school, since they require solid technical knowledge and contextual cues. For a number of occupations, the best (and maybe the only) environment for learning the basic skills required in the workplace—including those of a higher intellectual order—is one that provides intimate familiarity with the problems, issues, instruments, vocabulary and even professionals and role models of a certain domain. In short, newly acquired concepts are taught with concrete references. Mechanics may be taught both to fix a machine and to "fix" a problem with a colleague, but both skills would be specific to their domain.

While the need for specialized training increases, there is a simultaneous need to increase the level of conceptualization about the activities being performed and the skills being learned. The fact that similar skills (such as the ability to plan or make estimates) are used in such disparate circumstances as personnel and customer relationships, or technical troubleshooting, suggests that a broader, but still contextualized scope exists for both learning and transfer of learning. Using that scope ensures that individuals become mobile across a broader range of activities.

New basic skills affect training and education

The skills employers want—the ability to generalize and apply previous knowledge to new situations—reintroduces the classical problems of learning and transfer. The issue is an old one, and dates back at least 2,500 years. Plato established the basis of what the basics of a complete education would be, and he had a clear idea of the ultimate goal, to educate philosophers, or the ruling elites. At the same time, he was comfortable with the idea that masses would learn other skills, particularly the martial arts so cherished by the Spartans. In the middle ages the trivium and quadrivium made up the bulk of an scholastic education. Under this model, God replaced the Platonic Good, and the goal was that everything was propedeutic to understanding theology. Modern ages replaced God by the idea of good life, and progressively changed the emphasis from humanism to natural sciences. But in all these attempts the contents mattered, and the underlying idea was that learning would transfer from one discipline to the other, as well as to new situations.

Of course the system worked well. Highly selected, highly trained individuals had enough anchors based on which they could themselves make the transitions from abstract to concrete, from the general to the specific. The problem arises when individuals with less than a thorough education are unable to make these bridges by themselves.

In the U.S.A. , the principles of a good, general education for all were reaffirmed by the Report of the Commission of Ten (NEA, 1893). The idea that content matters and that some disciplines have a formative goal, such as to train the mind, were retained. The dramatic change came in the second decade, on the basis of a practical need to train people to cope with industrial development and at the same time to accommodate for the new, emerging findings from experimental psychology. In particular, the early results of Thorndike's research questioned the transferability of knowledge and skills. Thus, the belief that Greek, Latin, Mathematics or Chess were enough to ensure lifetime learning and transfer lost some of its magic power.

The proposals presented in the report Cardinal Principals of Secondary Education (NEA, 1918) illustrate the new trend which lies behind the present theoretical and practical divide in the education and training world. It was informed by experimental psychology, but it was even more informed by even more powerful philosophical, ideological and other practical concerns (Hirsch, 1987, chapter V in particular). Contents and subject-matter structure were no longer considered as the basis for transfer. Skills, generalizable skills took their place —contents did not matter, or did not matter much. The irony is that while content, subject-matter and structure were discarded, because they did not have the power to transfer, the transferability of the new, ill-defined "skills" were taken for granted. Worse yet were attempts to directly teach general cognitive strategies disembodied from meaningful conceptual and applied contexts and subject matter, discipline or occupation contents (see Box 2).

Box 2: The Barometer Story

Physicist and educator Alexander Calandra was invited to referee the grading of an examination question for a colleague. The student had charged that he should receive a perfect score, while the teacher was prepared to give him a zero. The question read "show how it is possible to determine the height of a tall building with the aid of a barometer." The student answered, "Take the barometer to the top of the building, attach a long rope to it, lower the barometer to the street, and then bring it up measuring the length of the rope. The length of the rope is the height of the building."

Calandra point out that the student had a strong case, as he had answered the question completely and correctly. On the other hand, giving him full credit would contribute to a high grade for the physics course, which would imply that the student knew physics. The question was posed to the student again, with the stipulation that the answer should show some knowledge of physics. The student said he came up with many answers but chose the following: "take the barometer to the top of the building and lean over the edge of the roof. Drop the barometer, timing its fall with a stopwatch. Then, using the formula $S= a \times t^2/2$, calculate the height of the building". Calandra advised his colleague to concede, which he did.

Out of curiosity, Calandra asked the student about some of his other answers. The young man recited three, all equally sound scientifically, and then said: "If you don't limit me to physics solutions to this problem, there are many other answers, such as taking the barometer to the basement and knocking on the superintendent's door . . . and saying to him: Mr. Superintendent, here I have a very fine barometer. If you will tell me the height of this building, I will give you this barometer."

After all this, the student still had not given the answer the examiner was looking for, so Calandra asked him if he really did not know the answer to the problem. He admitted he did, but was fed up with being taught creativity, critical thinking and problem solving, instead of being shown the structure of the subject matter . . .

Source: Alexander Calandra, "The Barometer Story," *Current Science, Teachers' Edition*, 1964, p. 45

As already suggested but largely ignored by neo-behaviorist psychologists such as Gagné (1965) or Artificial Intelligence Experts such as Newell and Simon (1972), all cognitive skills are knowledge-bound, and beyond similar or analogous circumstances, skills are simply not transferred. It is only curious that the work of Simon, based on previous findings by Adriaan de Groot, was also based, as Thorndike's previous work, on the transfer of Chess skills . . .

Embedded in the new approach to basic skills proposed in the NJAS seems to lie a reconciliation of these two trends. Earlier work on skills acquisition and transfer suggests that the best predictor of transfer to a lateral or higher level skill is the actual mastery of the skills included in the lower levels of the learning hierarchy. Successful transfer requires the application of cognitive or operational rules to the information specific to the skill acquired (like adding two numerals or using coordinates to locate a given direction). Cognitive and motivational research, and particularly the work of Bruner, Vigotsky, and more recently that of Gardner (1992) added extra dimensions to the behaviorist approach, but does not contradict these previous findings about the importance of embodying the learning of new skills with content, context, and structure relevant to that particular skill. Long before researchers confirmed these ideas, both military training and civilian training in firms have been successfully, albeit unknowingly, using contextually relevant training to develop basic skills in their workforce. The new approach to basic skills may provide the linking pins that individuals with weaker education background need to bridge the gap between theory and practice, concrete and abstract, contextualized and de-contextualized learning.

The NJAS approach makes it possible to re-establish the value and the limits of knowledge, structure, and domain, or subject-matter boundaries to the issue of transferable skills. Even though the solution to learning transfer is still not at hand, the problem is becoming more acute, but also more clear. Employers want a workforce with a number of basic skills. What these skills are and the level of complexity at which they are required vary with different occupations, firms, and sectors. They also want employees to transfer such skills to new situations, and to be able to acquire new skills in unspecified, but presumably related domains. What is needed now is to find a proper balance between contents and skills, theory and practice, learning contexts and work contexts in which such knowledge and skills can be applied and lead to further learning.

This discussion lies at the bottom of the debate between general education and technical or specialized training, and has profound implications for job design, education, and training. Moreover, as countries move towards a knowledge-based economy, work becomes more abstract, more akin to theorizing, thus suggesting the need to re-examine the meaning of occupational qualifications, and the best ways to obtain skills. Thus, the NJAS approach presents both theoretical and practical contributions to current thinking about education, training and occupational classifications. By clarifying domains of transferability, it helps focus and reconceptualize the issue of learning and transfer. At the same time, by expanding the range of skills considered basic, it introduces new dimensions to the debate about the limits between education and training.

Implications of cross-occupational basic skills

As discussed, the NJAS brings new dimensions to the concept of basic skills. First, it is no longer a fixed set of skills. It is an evolving concept that varies with the level of occupational proficiency, technological advancement, and with patterns of work organization. Second, it does not apply only to low-level, uneducated, or semi-skilled workers. Third, basic skills also refer to complex skills requiring the use of information, knowledge, and the intellectual, social, and practical skills necessary to the performance of a concrete behavior, or task. Fourth, the methodology used in the NJAS study suggests ways to maximize the transfer of the newly defined basic skills to new situations. Most importantly, these new dimensions introduce ways of re-thinking job classifications, training, and education.

The framework being developed under the NJAS program may well contain the beginnings of a new paradigm to define occupations and occupation mobility. Opposite to current practices, employers might be interested to define occupations according to a range of common competencies and common skills, rather than by narrow sets of skills that divided up occupations in the past. Since employers would also be interested in broader issues, including the transfer of learning to new work situations, individuals could be assessed not only in the range of skills effectively mastered at a given time, but their ability to eventually transfer those skills across broad occupational domains could be better predicted. To some extent, this is already reflected on employers' preferences for individuals displaying certain "broad" characteristics such as "work experience" or being a graduate from a certain institution. In both cases, employers seem to be less interested in specific acquisitions or skills, but on generic learning experiences which were acquired in contexts considered meaningful. By the same token, individuals with a broad range of basic skills related to a range of work situations would enhance their potential mobility. These seem to be the new elements behind the future redefinition of occupational boundaries and occupation-relevant skills.

The new approach to basic skills may also help motivate employers to take a harder look at issues of education and training. It no longer suffices to blame the educational system for its failures, or to establish normative standards for the new entrants in the workforce as was initially intended by the SCANS. Sending workers back to school will not do the trick, because even if they are successful, conventional schooling and conventional literacy programs can no longer do all that needs to be done to ensure an adequately trained workforce.

Pre-employment and on-the-job training are already being affected by the general perception that employers need a broad-based, flexible workforce. The NJAS effort, and other diagnosing and training initiatives such as job profiling, developed by the Work Keys project (ACT 1994) are likely to help employers and training institutions to develop the skills needed in efficient ways, while at the same time providing employees with an opportunity to acquire and expand a broad basis of relevant, transferable basic skills. As theory and empirical evidence confirms, learning such skills, including very basic skills such as literacy and numeracy in contextually relevant environments is more likely to ensure motivation, learning and transfer.

Moreover, as the nature of the work becomes more conceptual and abstract, the workplace itself becomes a privileged place of learning, as it offers unique opportunities for embodied learning and for meaningfully applying and transferring what has just been learned. Training becomes a way to learn to think and abstract from concrete situations, not just to learn to accomplish narrow, specific tasks. In practice, as is already happening in knowledge intensive firms, working experiences are becoming learning experiences, with working and learning hardly separable in many cases (Eliasson, 1987).

What is new and particularly relevant to countries where the workforce is very heterogeneously educated and trained is the fact that firms become the best locus to teach general, and generalizable basic skills. However, differently from the past, acquiring experience and skills by means of repetition of simple tasks is not likely to lead employees very far. In the past, most individuals would improve their skills and productivity by repetition —experience was often synonymous with practice (how many times an operation was performed). In the knowledge-based economy, skills improve only marginally with practice. The conceptual nature of new jobs require an increasingly high ability to deal with symbols, abstractions, and higher-order thinking. What improves productivity is the ability to learn and incorporate new experience, and that requires an enhanced ability to learn. The novelty lies in the fact that work activities are increasingly becoming learning, thought-provoking opportunities.

Developments in vocational education and training in Europe in the mid-1980s suggest that there is more than one answer to these questions. While academic schools have been hardly affected by these developments so far, vocational and technical schools are increasing the time and effort allocated to teaching conceptual and abstract issues, but always within the context of occupation-specific issues. In a way, most continental European training systems have already incorporated the concept of contextually relevant basic skills in their vocational and technical secondary education.

A better integration of learning and doing to obtain basic skills presents a formidable challenge to conventional education. However, it is clear that while schools are being asked to do more, and to prepare students with a broader basis, there is a clear limit to what can be meaningfully learned and taught in schools that is useful to the workplace. The challenges presented to comprehensive school systems, such as that of the U.S.A. are even more formidable. Schools in a state like Texas are already trying to revise their curricula to make them more meaningful to the knowledge-based economy. But there is a limit within which general basic skills of the type employers need can be meaningfully taught and learned in an academic setting, as there are great risks of trivializing technical education, or watering down academic standards.

In the knowledge-based society, the intellectual content of work is increasing, and as a consequence, working and learning are becoming synonymous. It is also a fact that barriers are being demolished, and a marriage between education and training is in the works. The new concept of basic skills may prove to be the missing link that will make such a marriage possible.

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Chapter 8

A Converging System? Explaining Difference in the Academic and Vocational Tracks in England and Wales

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Introduction

The paper argues that there is escalating awareness, at policy level and within education and training providers, of the need to remove unnecessary discontinuities in the education and training system in England and Wales. I present a listing of key factors which explain differences between the academic and vocational tracks in the system and outline the extent to which policy activity and development work are being directed at them. The paper looks particularly at the role of GNVQs (General National Vocational Qualifications), currently being introduced in England, Wales and Northern Ireland. The original aim of this innovation was to rationalise those qualifications with a vocational focus which are delivered in educational settings. Moving out of the 1992-3 pilot phase (9000 candidates in 105 schools and colleges), GNVQs have enjoyed a rapid take-up, responding to strong demand from institutions and students. In 1993-4 participation increased to 1400 schools and colleges and 82,000 students. Plans now exist to introduce GNVQs into pre-16 education - a 'vocational pathway' (Dearing, 1994). It is this strategic move, in particular, which throws into relief some of the differences and tensions which the UK has to resolve if the system is to move to a more unified system, and away from rigid academic and vocational tracks.

I do not describe (i) the emerging system in Scotland, which possesses key differences in its system of education and training, and has a different change dynamic (SED 1992; CSUP 1992) (ii) Northern Ireland (iii) issues of contrast between England and Wales, such as the requirement for Welsh language provision.

I refer throughout the paper to 'segments in the system'. I use this in two ways. Firstly, to describe different parts of the system which exist at a given level, e.g., "vocational segment" and "academic segment." Secondly, I use it to describe age-related stages of education and training, e.g., "the post-16 segment," referring to education and training for those people over 16 years of age. The diagram on page 93 shows the National Council for Vocational Qualifications' (NCVQ's) perspective on how these segments combine to form a national education and training system.

Key factors for explaining difference

Rather than taking each of these factors in turn, I will identify key points of difference in the system and examine how the factors below contribute to an explanation of those differences. As a means of explaining change, some of these factors are controversial. An extended examination of these factors is presented in a further paper by the author (Oates, 1994).

- factor #1 management of collaboration between agencies which regulate the system
- factor #2 competing assumptions and ideologies of key individuals
- factor #3 distinctions between curriculum models
- factor #4 criteria and mechanisms for regulation of awards and of the education & training system
- factor #5 vertical integration in the system, including frameworks of levels
- factor #6 horizontal integration in the system, including subject-domain specifications
- factor #7 social constructs regarding parity of esteem
- factor #8 funding arrangements
- factor #9 locus of control of assessment system
- factor #10 form of content specifications
- factor #11 contact between the research and development communities across the vocational and academic system

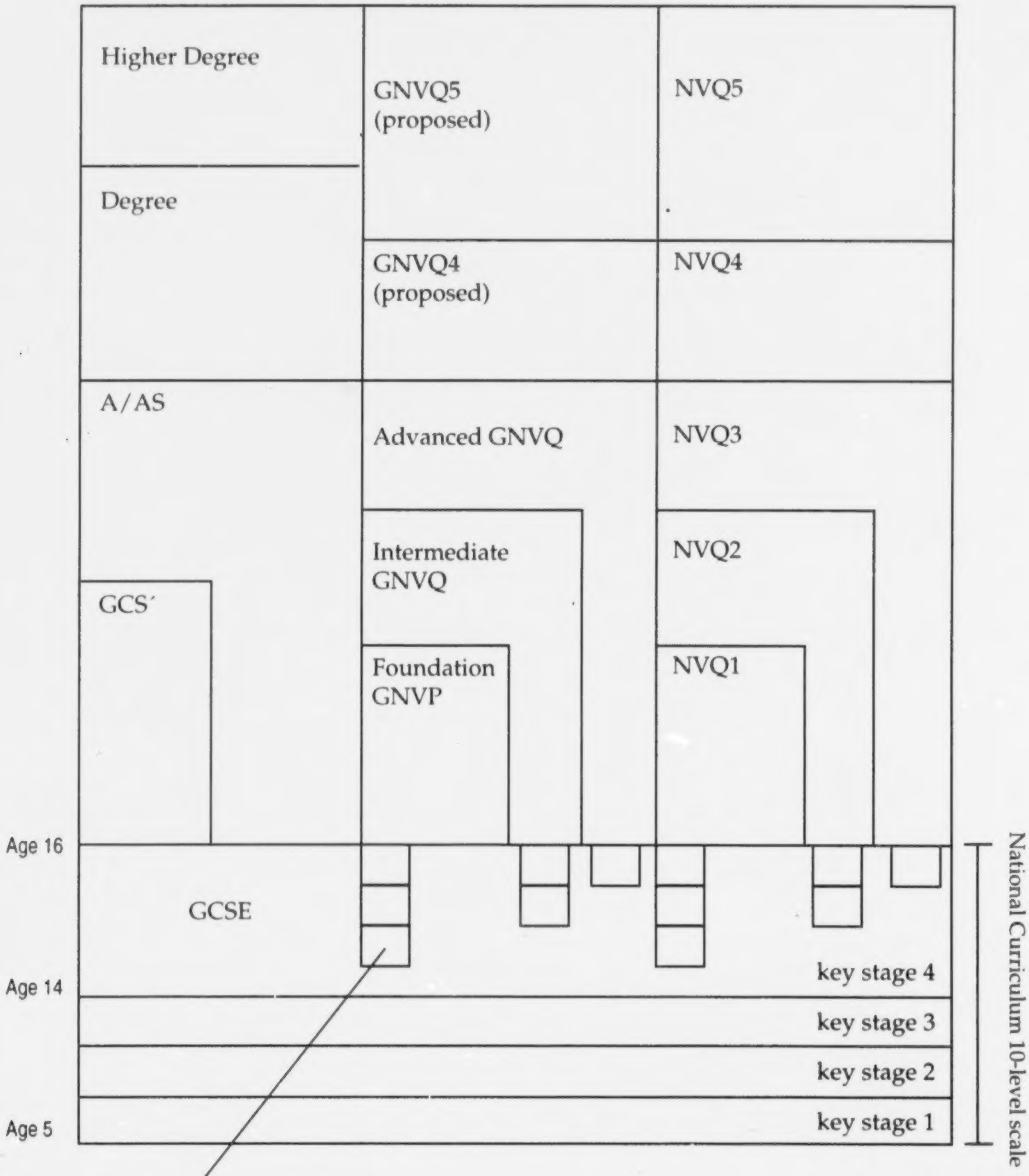
GCSE (General Certificate of Education)

Introduced in 1986 as a single qualification to amalgamate CSEs and O levels. Designed specifically for the 14-16 age group, students typically study for two years, they will take a maximum of about 10 GCSEs and a minimum of 3 (English and Maths and Science). In 1993, there were a total of 1,334 syllabuses available (for example, 105 in mathematics). There are four exam boards (the GCSE Groups) in England, one in Wales and in Northern Ireland; a different system operates in Scotland. These qualifications are graded A (the highest grade) to G (the lowest). About 50% of 16-yr-olds achieve five GCSEs at grades A-C.

GCE A-level (Advanced Level) and AS (Advanced Supplementary)

Introduced in 1951, and is an established requirement for those wishing to progress to higher education. A typical A-level programme will be studied for two years, and combine 3 A-levels e.g., Maths, Physics and Chemistry; although combinations such as Ancient History, English and Environmental Science are possible. A-levels are aimed at 17-18-year-olds; although over 50% of students are now older learners taking the awards in further education colleges. An AS qualification is intended to cover half the content of a full A-level. The depth of study is intended to be the same as that of the full A-level. In 1994, there were 410 A and AS syllabuses available. Most schools offer to pupils a range of 10-12 A-levels; few offer AS qualifications. They are graded A (the highest grade) to E (the lowest). A-levels are taken by the top 25% of 17-18 year old. About 30% of these students do not attain even the lowest grade.

The National Framework of Education and Training: An Overview


Higher Degree
GNVQ5
(proposed)
NVQ5
Degree
GNVQ4
(proposed)
NVQ4
A/AS
Advanced GNVQ
NVQ3
Intermediate
GNVQ
NVQ2
GCS´
Foundation
GNVP
NVQ1
Age 16
GCSE
Age 14
key stage 4
key stage 3
key stage 2
Age 5
key stage 1
National Curriculum 10-level scale

Some schools delivering units of GNVQs pre-16

Key Awards in the Framework:

GNVQ (General National Vocational Qualification)

First five areas introduced in 1993, with nine further areas to be piloted and implemented over the following two years (see table on page #6) The function of GNVQs is to open progression both to higher education and to employment. They are made up of units, and are designed to rationalize all vocationally-oriented awards delivered in educational settings. They are based on a unit structure, and are available at three levels: Foundation (comprising of six vocational units plus the three core skills units at level 1, and is equivalent to GCSEs at grade D-G); Intermediate (comprising of six vocational units plus the three core skills units at level 2, and is equivalent to 4-5 GCSE passes at grades A-C); and Advanced (comprising of 12 vocational units plus the core skills at level 3, and is equivalent to 2+ A levels). The three different GNVQ awarding bodies have to deliver exactly the same mandatory units (approx 2/3 of each award) but can offer optional units which can be unique to each awarding body. Foundation and Intermediate delivered in post-16 settings are typically one-year full-time programmes, with Advanced as a full-time two-year programme. The implementation of GNVQs in the 14-16 segment involves the development of Part 1 Intermediate and Foundation awards, which contain 3 vocational units (rather than 6 for the full award) plus 3 core skills units. A Part 1 award would be taken over 2 years alongside GCSEs, occupying 20% of curriculum time. There are a currently three levels in the GNVQ framework and 15 vocational areas.

NVQs (National Vocational Qualifications)

First developed in 1986 in order to rationalise all vocational qualifications which are oriented towards work practice. They are made up of units - awards vary in the number of units they contain, they can be taken by candidates of any age, and the system provides for credit accumulation of units over time. Some delivery of NVQs is college-based, the intention is that in most settings evidence of achievement would be collected through occupational activities undertaken in the workplace (Annex 1). They are used by employers, and as a focus for Government-funded training schemes and for Government-funded training in employment. In 1994, there are just over 600 NVQs in 11 areas. In early 1994, Government initiated the design and implementation of the Modern Apprenticeship - a curriculum framework for training in work. These use NVQs at level 3 as the main certification for 2-3 year provision for the 16-17 age group, with a special provision for those wishing to start the programme at 18 years of age. By the year 2000, the aim is to have 150,000 apprentices in training in England at any one time (DTI & ED, 1994).

There remain vocational qualifications which are not recognized as NVQs, and development of NVQs and the transformation of existing awards into NVQs is proceeding more rapidly at the base of the system than at the higher levels.

Government has set the following targets (DTI & ED, 1994):

Foundation training
1. By 1997, 80% of young people to reach National Vocational Qualification level 2 (NVQ2) (or equivalent, for example five GCSEs at grades A-C)
2. Training and education to NVQ3 (or equivalent, for example two A levels, or a vocational A level) to be available to all young people who can benefit
3. By 2000, 50% of young people to reach NVQ3 (or equivalent (*e.g., GNVQ Advanced*))
4. Education and training provision to develop self reliance, flexibility and breadth

Lifetime learning
1. By 1996, all employees* should take part in training or development activities
2. By 1996, 50% of the workforce to be aiming for NVQs or units towards them
3. By 2000, 50% of the workforce to be qualified to at least NVQ3 or equivalent
4. By 1996, 50% of medium-to-large organizations (200 or more employees) to be "Investors in people"

*UK workforce approx 22M

The attainment of these targets is strongly reinforced by Government funding regulations for training programmes and industrial training, and the incorporation of NVQs in initiatives such as Modern Apprenticeships (DTI & ED, 1994). It is important to note that these emphasize strongly the equivalence between academic and vocational awards. This is helpful in establishing parity of esteem for vocational and academic awards, but there remain underlying technical problems in securing full articulation between the different parts of the system. The remainder of the paper is devoted to examining the nature of these problems.

Segmented Control, Intervention And Innovation (Factors #1, #2, #4)

While the 1944 Education Act included the provision of technical schools and outlined strategy for both academic and vocationally-oriented general education, subsequent legislation and major interventions essentially have been focussed on either the academic or the vocational. They have not been integrating or unifying measures. The following key revisions to the system exemplify the segmented nature of control, intervention and innovation:

Academic	General Education with a Vocational Focus	Industrial Training
1965 Department of Education and Science (DES) circular 10/65 The Organization of Secondary Education		**1964** formation of Industrial Training Boards
		1981 New Training Initiative
1983 formation of GCSE groups	**1983** introduction of Technical and Vocational Education Initiative (TVEI)	**1986** formation of NCVQ and introduction of National Vocational Qualifications (NVQs)
1988 Education Reform Act	**1985** Certificate of Pre-Vocational Education (CPVE)	
1993 amalgamation of Schools Examinations and Assessment Council and the National Curriculum Council into the new Schools Curriculum and Assessment Authority (SCAA)	**1992** introduction of General National Vocational Qualifications (GNVQs)	**1994** implementation of Modern Apprenticeships (by Employment Department (ED)) which incorporate NVQs at level 3

This separation has resulted in a consolidation of high- and low-status routes, and inefficient progression routes for learners. The academic segment previously has been treated as high-status and of greater political significance. This has resulted in higher levels of detailed Government regulation of the content of awards and their assessment and reporting (Salter & Tapper, 1981), culminating in the production and implementation of the National Curriculum. In contrast, of lower status and with less public attention focussed on it, the vocational segment has been able to explore assessment regimes and curriculum approaches which contrast with the models dominant in the academic segment. Innovation has not been pursued on a system-wide basis - encompassing the academic and the vocational - but within the different segments of the system.

These discontinuities give rise to very real problems for students wishing to move between the academic and vocational segments, and for teachers and curriculum managers responsible for constructing coherent programmes in schools and colleges. It is problematic for industry in two key respects: (i) in purchasing training provision from the education sector, industry is faced with a wide variety of programmes with contrasting content and expressed in different ways, and (ii) industry continues to be required to make selection decisions on differing, often complex combinations of qualifications.

These divisions were often - and remain - the reason for boundary disputes between organizations operating under direct Government remit. In 1983, Government tasked the Manpower Services Commission (now assimilated into the Employment Department) to implement TVEI in schools and colleges for the 14-18 age group. This cut across the jurisdiction of the Department of Education and Science (DES, now DfE) and Local Education Authorities and marked the first significant step towards greater central control over the content of the curriculum. The original intention was for a transfer of control from the Manpower Services Commission to the DES once the programme had become established, but the MSC retained control in the face of considerable inter-departmental tensions.

One further example of inter-agency tension existed during the initial years of National Curriculum implementation, where the content of the curriculum was in control of one agency - the National Curriculum Council (located in York) - and the assessment arrangements for the National Curriculum was in the control of another - the Schools Examinations and Assessment Council (located in London, 200 miles away from NCC). After a very short period of development and implementation, it was clear that the separation of the organizations and their functions was giving rise to substantial problems. Amalgamation of the two bodies was considered by Government to be a remedy. This was completed in 1993 with the formation of a replacement single body: the Schools Curriculum and Assessment Authority (SCAA).

Implementation of GNVQs has led to tensions appearing in the system in terms of the contrasts between (i) GNVQs and (ii) GCSEs and A/AS. The proposal to consider GNVQs as an option in the 14-16 segment creates further overlaps between the remits and spheres of influence of SCAA and NCVQ (this is explored in greater detail at the end of this paper).

The distinction between SCAA and NCVQ is not the same as the split between the NCC and SEAC. The NCC-SEAC structure represented an unsustainable split between two functions in a single academic curriculum framework - namely, between content and its assessment. Unlike this, SCAA and NCVQ both have control over content and assessment in their respective segments - the essential issue is that they have developed contrasting curriculum models and use very different mechanisms for development and implementation.

Segmentation of legislation and of control, intervention and innovation (factor #4) impacts on the degree of *vertical* and *horizontal integration* which is displayed in the system. It is this to which I now turn.

Horizontal And Vertical Integration (Factors #4, #5)

A system with effective horizontal integration would display a low degree of conflict or contrast between the learning and assessment models in different qualifications and programmes. For example, a 16 year-old student on a programme which combines vocational and academic components would not feel that any differences or discontinuities in learning and assessment were inhibiting their opportunities for learning. Horizontal integration would also be demonstrated through parity of esteem for academic and vocational awards; low levels of inefficient overlap between different awards; and the capacity for easy combination of academic and vocational components into coherent programmes.

A system with effective vertical progression would display a framework of levels and progression routes which allow credit recognition between academic and vocational segments; rational and efficient decision-making by selectors in education and industry; an absence of 'blocks' to progression (including age cut-offs); and effective transfer between pathways when decisions are made to change occupations or subject focus. Again, as with horizontal integration, learners should not experience dysfunctional contrasts in learning and assessment models as they progress up the system.

I will now examine key aspects of horizontal and vertical integration through an examination of:

- contrasts in classifications of academic subjects/vocational areas
- contrasts in learning and assessment models
- frameworks for levels of attainment

Contrasts In Classifications Of Academic Subject/Vocational Areas (Factors #5, #6)

Classifications of domains:

National Curriculum	GNVQ Framework	NVQ Framework
Art English History Geography Mathematics Modern Language Music Physical Education Science Technology	Art & Design Business Construction & Built Environment Distribution Engineering Health & Social Care Hospitality & Catering Information Technology Landbased Industries Leisure & Tourism Manufacturing Media & Communications Performing Arts Science	Communicating Constructing Developing and extending knowledge and skill Engineering Extracting and providing natural resources Manufacturing Providing goods and services Providing health, social care and protective services Providing business services Transporting Tending animals, plants and land
	plus	*plus*
Note #1 the proposal also including cross-curriculum themes in areas such as *Economic and Industrial Awareness*, and *Environmental Understanding*; these faded from the framework during '92 - '93	*Core skills in:* Application of numbers Communication Information Technology Personal skills Problem solving	*Core skills in:* Application of numbers Communication Information Technology Personal skills Problem solving
Note #2 the most significant GCSE titles correspond to the National Curriculum subject categories; however there exists a range of GCSEs which do not correspond directly, for example, Photography (ULEAC, 1994), Sociology (SEG, 1994)	*Note #3* GNVQs focus on specific areas above: e.g., there is a 12-unit Advanced GNVQ in *Business*, a 12-unit Advanced GNVQ in *Art & Design* etc. There are few common units between the awards, however, all awards include the same core skills units in Communication, Number & IT	*Note #4* NVQs are classified according to the major categories above, but qualifications can combine units from different areas and different levels in the NVQ framework

Core skills are seen by schools and colleges as desirable features of both academic and vocational provision, but are only available from GNVQ Awarding Bodies, they are not a deliberate feature of assessment in GCSE or A/AS awards.

The contrast between subject areas in the vocational and academic has implications for programme design, institutional management, staff development, resource management and can affect students' learning. Stating the same content in a different way in different awards can introduce difficulties for students: they can have difficulties in making links between different components of the system. Even though there may be strong links between the mathematics delivered in the National Curriculum at level 9 and the mathematics demanded in an Intermediate Engineering GNVQ, they may not associate one with the other (Oates, 1992; Wolf, undated). Increasingly, schools and colleges are themselves analysing different awards in order to identify common content - this can help them to form larger, more viable teaching groups and to help students see connections between different parts of their programmes. However, this is a response by individual institutions and teachers to contradictions in awards; it is uneven, and the problem of the 'integrated curriculum' would best be remedied by more co-ordinated design of awards, for example, the use of more compatible models for stating modules in A/AS and units in GNVQs.

It should also be noted that there are differences between the GNVQ areas and the classification system for NVQs. The progression routes are complex between GNVQs - an education-based award for delivery in schools and colleges - and NVQs - a performance-based award used for certification of occupational competence. NCVQ is currently undertaking a series of projects in areas such as Construction and Health & Social Care in order to establish viable routes and effective progression arrangements.

Some GNVQs fall in areas which have never previously been taught by schools as a single award: e.g., Distribution, and Manufacturing. Others combine some significant aspects of existing subjects into a new single award: e.g., Health and Social Care GNVQ, which includes aspects of biology, sociology and psychology. This has created a need for many schools and colleges to fundamentally re-arrange the way that they organize staff, resources and the timetabling of programmes; previously they have based arrangements on quite different subject demarcations.

Some, but not all, GNVQs overlap directly with existing GCSEs: e.g., Science (which overlaps with a mandatory National Curriculum subject), and Art & Design (which overlaps with an optional National Curriculum subject). This presents the problem of awards which fall in exactly the same subject domain but which have very different approaches to the subject matter, assessment and learning styles (see the summary table of contrasts between GCSEs, A/AS, GNVQs and NVQs). Whilst it is certainly possible to retain awards which cover the same content in very different ways - perhaps on the grounds that they are meeting a wider range of student needs - the current contrasts are quite profound. These contrasts are disturbing to Government, since the emphasis on coursework (internal assessment) and a devolved assessment model in GNVQs is seen as sharply contrasting with recent changes in the permitted maximum of assessed coursework in GCSEs and A/AS (some GCSEs were originally assessed through 100% coursework; this now varies from a permitted maximum of 60% in technology to 20% in mathematics). The system is faced with two types of awards - in the same segments of the education system - which are pulling in quite different directions. This gives rise to a situation which possesses considerable instability.

Indeed, proliferation of directly competing awards which are stated in a very different way and which are regulated by different agencies may increase in the 14-19 segment rather than decrease. There are indications that the GCSE Groups, having been excluded so far from offering GNVQs and arriving very late on the scene as GNVQ Awarding Bodies (probably 1997), are considering the development of vocational GCSEs. These have existed since 1986, but very few have been offered since they are difficult to design in such a way that they meet the central SCAA criteria for GCSEs; those that have emerged have been taken by very few students, essentially because of the low esteem in which vocational education has been held (NCE, 1993). Ironically, GNVQs and Government emphasis on the parity of esteem of vocational and academic awards has increased the status of the vocational route from 14 onwards, and this may have created a climate in which vocational GCSEs might grow. This is unlikely to improve vertical or horizontal integration in the system.

Contrasts In Learning And Assessment Models (Factors #3, #7, #10)

A lack of vertical and horizontal integration in any education and training system can have an adverse effect on students' learning and on progression (Morris, 1991). An example of a lack of horizontal integration: to be on programmes which include different awards which possess very different styles of learning and patterns of assessment can confuse and de-motivate students (Coles & Matthews, 1994). This is already an identified problem within those institutions where learners are working towards both GNVQs and A levels (for example, some students working towards an Advanced GNVQ in Science are also working towards an A level in Biology).

The same problems are associated with vertical discontinuities, for example:

- the movement of 16 year-old students from GCSEs with substantial amounts of coursework to A levels with a more traditional assessment regime
- the movement from GCSEs to GNVQ Advanced awards, where the assessment regime are different, the content is stated very differently, and attainment in core skills is demanded in the GNVQ.

I will return to this in the more elaboration of aspects of difference between academic and vocational awards given at the end of this paper.

Crucially, contrasts in the awards are also associated with issues relating to parity of esteem. Are the awards comparable in demand, scope, value? Government has introduced equations between the awards which attempt to disrupt prevalent societal opinions that academic awards (GCSE, A/AS) are for high achievers and vocational qualifications (GNVQs and others) are for low achievers. However, in some of the GNVQ pilot programmes these regressive views continue to persist. For example, during the GNVQ pilot in Science, those students with grades AA and BB (in double GCSE science 14-16) were directed by the schools into A level Science, while those with CC and DD were guided into Advanced GNVQ Science.

Frameworks For Levels Of Attainment (Factors #5, #6)

It is ironic that the main features of the Government's White Paper 'Working together - Education and Training' (DE & DES, 1986) contained some important measures which *consolidated* certain distinctions between the academic and vocational segments of the system. 'Working together' launched a vocational qualifications structure which did not fully articulate with academic awards, nor did it articulate closely with cross-EU (then EEC) initiatives (Oates, 1986 and Jessup, 1986).

The framework uses a 5-level structure into which all National Vocational Qualifications are located; Level 1 relating to basic or foundation awards, Level 5 relating to professional awards. It relies on 'indicative definitions' (see annex 1). When initially introduced (1986), the framework related primarily to 16+ vocational awards. Qualifications within the framework are built up of units, with typically 15 units making up each qualification. Individual units are not assigned a level. This means that the same unit can appear in different awards at different levels in the framework. NCVQ adopted the term 'unit' to illustrate the difference between 'modules of learning' - where the module delineates the nature and duration of the learning programme required - and 'units of credit' - which are statements of the standards which the student should achieve, and do not over-prescribe the nature or duration of the learning which will result in the outcomes described in the unit (Jessup, 1991). The unit-based system is therefore intended (i) to allow more flexibility in patterns of delivery; (ii) to offer less prescription of learning methods; and (iii) to support effective credit accumulation systems.

Units are assessed using a variety of assessment methods. These are selected under the principle of 'fitness for purpose' - an emphasis on validity. Candidates achieve an award when they have met the requirements of each unit; there is no final summary exam, nor do they have to meet any other overarching requirements additional to the individual units. There are three important dimensions to the framework: vertical structure, horizontal structure and content:

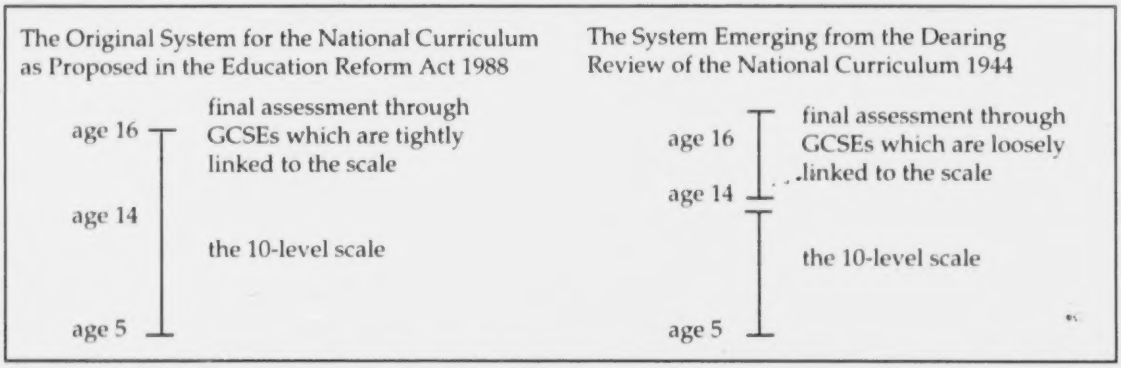
Vertical structure	the five levels
Horizontal structure	the 11 occupational areas (e.g., 1 Extracting and providing natural resources; 4 Engineering; 10 Communicating)
Content	the requirement to group units together into awards and use a standard method to state these units

This framework differed fundamentally from the 10-level scale for pre-16 general education introduced by the National Curriculum Council (NCC) in 1998 under the terms of the Education Reform Act (DES, 1988). The 10-level scale is built up of a series of descriptive statements of attainment, which are accompanied by programmes of study. These state the content to be covered. It is a requirement in law that schools both teach and assess the National Curriculum to all students up to the age of 16, with GCSEs as the assessment in the 14-16 segment.

Vertical structure	the 10-level scale
Horizontal structure	the 10 subject areas (e.g., Mathematics; Science; History)
Content	attainment targets which divide each subject into segments; each attainment target containing a set of descriptive statements which define outcomes to be achieved (statements of attainment), arranged as progressive attainment in the 10-level scale; accompanied by programmes of study

The key point here is not the detail of the differences but that the framework in place for pre-16 general education is significantly different from the framework for post-16 provision. These differences re-inforce the age of 16 as a cut-off point - or 'transition point' - in the overall system. The Dearing review of the National Curriculum (Dearing, 1994) has changed the proportion of time that schools have to dedicate to it (from approx 75% originally, to a current 60% of total programme time) and has promoted the concept of the 14-19 curriculum. However, not all of the changes in the 1994 review contribute to an erosion of the 16-yr transition point; many of them re-inforce the 16-yr point as a highly distinctive transition point in the system.

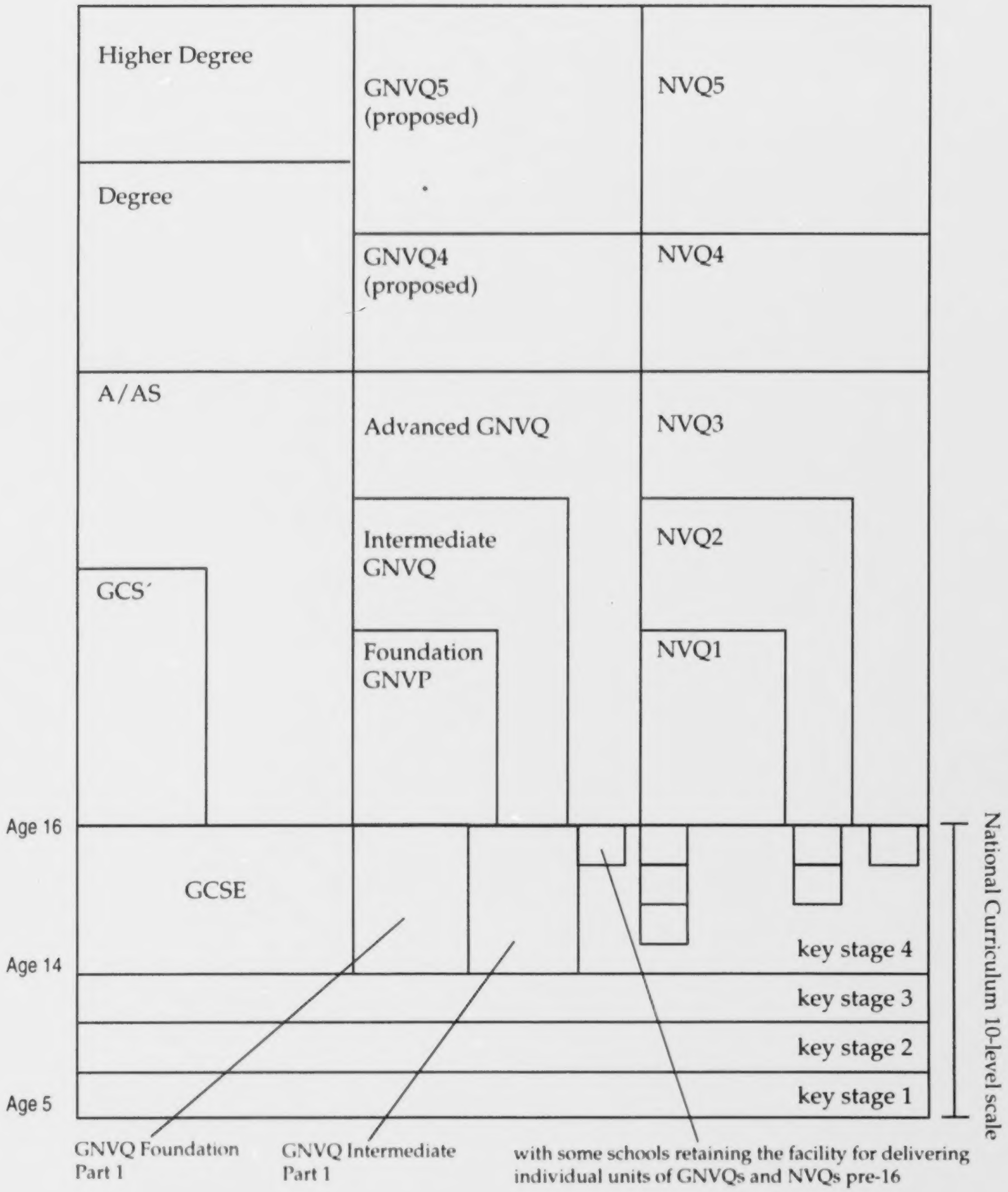
The National Curriculum was introduced in phases, regulating education for 5-11-year-olds from 1989, with progressive coverage of age groups and subjects. The full framework 5-16 in all subject areas would not have been in place until 2003. The revision of the National Curriculum has overtaken its rolling implementation. GCSEs - the main form of 16-year-old certification - had existed for about 10 years and did not articulate well with the National Curriculum framework (Stobart, G 1991). During 1991-3, development work on the then 10-year-old GCSE qualifications was focused on aligning the grading system for GCSEs to the National Curriculum statements of attainment in the 10-level scale. This proved to be a technical trauma for researchers; no solution for linking the grades to the scale was developed - implementation of the link was postponed by the then Secretary of State for Education, John Patten, in 1993. One feature of the Dearing Review was to limit the application of the 10-level scale to education provision for 5-14-yr-olds, and remove its application to provision for 14-16-yr-olds. From 1996, in the 14-19 academic segment schools will have to cover the content prescribed in *programmes of study* and GCSE grading will be the mechanism for differentiating attainment, not the 10-level scale. Assessment for the 5-14-year-old segment of the system will be through specific assessment tests designed to directly assess the *attainment targets* in the 10-level scale (Annex 2).


The Original System for the National Curriculum as Proposed in the Education Reform Act 1988

The System Emerging from the Dearing Review of the National Curriculum 1944

age 16
final assessment through GCSEs which are tightly linked to the scale
age 14
the 10-level scale
age 5
age 16
final assessment through GCSEs which are loosely linked to the scale
age 14
the 10-level scale
age 5

The National Framework of Education and Training: An Overview

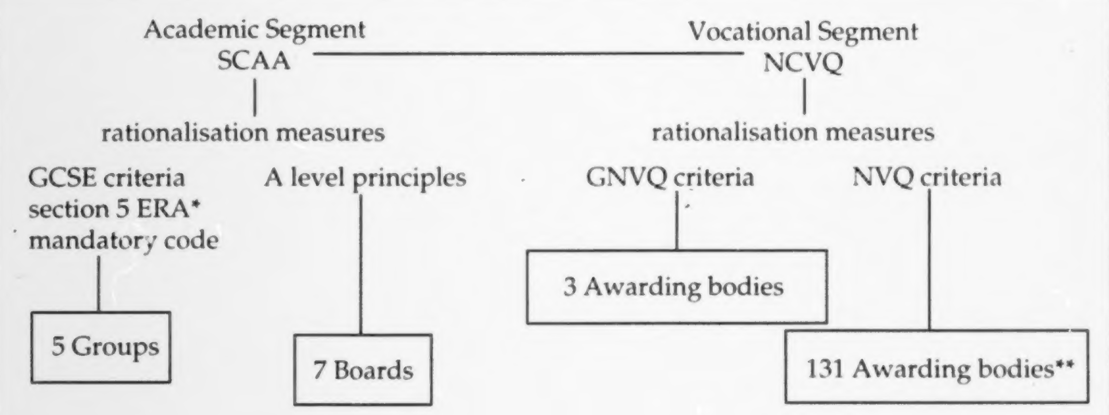

Higher Degree
GNVQ5 (proposed)
NVQ5
Degree
GNVQ4 (proposed)
NVQ4
A/AS
Advanced GNVQ
NVQ3
Intermediate GNVQ
NVQ2
GCS´
Foundation GNVP
NVQ1
Age 16
GCSE
Age 14
key stage 4
key stage 3
key stage 2
Age 5
key stage 1
National Curriculum 10-level scale
GNVQ Foundation Part 1
GNVQ Intermediate Part 1
with some schools retaining the facility for delivering individual units of GNVQs and NVQs pre-16

This, in effect, introduces a further, distinctive tier into the system. Instead of being fully assimilated into the 5-16 segment under the 10-level scale, GCSEs become a distinctive segment defining education provision for 14-16-year olds. This provides an additional discontinuity in vertical integration in the system. To this is added the possibility of further horizontal discontinuity by the introduction of GNVQs as a 'pathway' in the 14-16 segment alongside GCSEs - with their contrasting assessment models and ways of stating content - in the same areas.

The proposed system—for implementation in 1996 —herefore assumes the following form, with changes to the 14-16 segment in particular:

Contrasts In The System: Qualifications And Systems Of Regulation (Factors #1, #3, #4, #6, #9)

SCAA (formed in 1993) and its predecessor organisations (during the late 1970's and 1980's) have been responsible for implementing a series of measures to secure greater consistency between different bodies awarding academic qualifications - for example, the formation of the GCSE Groups, the introduction of the GCSE Criteria and the GCSE Mandatory Code of Practice. NCVQ—since its formation in 1986—has secured increasing coherence in the vocational area by the introduction of NVQs to replace the 'jungle' of diverse vocational awards which existed previously. The implementation of NVQs and the erosion of non-NVQ vocational awards is being supported through changes to the Government's funding regime for vocational education and training and the promotion of national education and training targets (ED, 1992). Through these measures, the extent of direct control over the precise form of awards and the content they include has therefore increased significantly in the last decade (Salter & Tapper, 1981; Macfarlane, 1993; NCE, 1993), representing a fundamental shift in the locus of control in all segments of the system.


Academic Segment
SCAA
Vocational Segment
NCVQ
rationalisation measures
rationalisation measures
GCSE criteria
section 5 ERA*
mandatory code
A level principles
GNVQ criteria
NVQ criteria
3 Awarding bodies
5 Groups
7 Boards
131 Awarding bodies**

* Educational Reform Act 1988

** There are 25 main awarding bodies; these possess the bulk of NVP candidates

Note: This diagram refers to England and Wales; there are different arrangements in Northern Ireland and Scotland.

The GNVQ framework not only presents a way of stating awards using exactly the same method but demand that different Awarding Bodies deliver exactly the same set of mandatory units, with a capacity to differentiate each award through optional units (one third of Intermediate and Advanced awards, and one half of the awards at Foundation level). This represents an unprecedented rationalisation of the vocationally-oriented general education segment of the system.

Current arrangements under SCAA and NCVQ are securing increasing convergence in the way the content of awards is stated and in assessment regimes. However, this convergence remains segmented, the apparatus and practice on the left-hand side of the diagram above requires careful alignment with apparatus and practice on the right-hand side. Currently, GNVQs are the main point of contact/overlap between the segments, and are in consequence the focus of collaborative discussions and Governmental decision-making.

The existence of tensions between the academic and vocational segments is not a question of direct confrontation between two Government bodies. Whilst some commentators in the UK present it in this form, this is far too crude a model to explain the nature of the current change dynamic. Using the categories I outlined at the outset of the paper, in examining the relationship between SCAA and NCVQ there are of course tensions relating to management of collaboration between agencies (factor #1) and competing assumptions and ideologies (factor #2). However, there is a high level of collaboration between the organisations, and Government instruction demands that constructive collaboration is sustained. Rather, tensions exist as a function of conflict between two curriculum models (factor #3), each of which possess crucial differences from the other.

The content of any qualification pre-16 comes under the regulation of SCAA, and this is enforceable in law under the Education Reform Act. The content and form of GNVQs and NVQs is determined by NCVQ rather than SCAA, and while GNVQs and NVQs remained solely as post-16 qualifications, the lines of control were clear. However, with the Dearing proposal in early 1994 to use GNVQs as a pathway in the 14-16 segment, the lines of control have become more complex. Delivery of the Part 1 GNVQ award in 14-16 is regulated in law by SCAA, yet the criteria and approval for GNVQs and NVQs are regulated by NCVQ. While the key approval committees include cross-representation of the two bodies, there remain key differences in (i) the criteria and mechanisms for regulation of the awards (factor #4) and (ii) fundamental aspects of the respective curriculum models. These are explored in the following table.

SCAA Control
effected through statutory requirements under the terms of the Education Reform Act 1988, applicable essentially to pre-16 education

GCSE	A/AS
key criteria GCSE criteria. GCSE Mandatory code of practice National Curriculum programmes of study	*key criteria* A/AS criteria. A level subject cores
content stated in the form of a syllabus, with assessment objectives, grade descriptors and guidance (see annex 1) Linked to National Curriculum programmes of study and level descriptors majority of awards are not modular, decline in modular schemes but increased demand for them	*content* stated in the form of a syllabus, with assessment objectives, and guidance. centralised principles and procedures now established; cores to be implemented from '96. majority of awards are not modular, decline in modular schemes but increased demand for them.
size each GCSE should occupy 10% of curriculum time	*size* notionally 320-360 hours of study over two years for each A level.
form of assessment combination of coursework and final examinations: regulation of the proportion of different types of assessment to be used. This ranges in GCSEs from 80% final written examinations (maths) to 40% (technology);	*form of assessment* combination of coursework and final examinations: a mimimum of the 30% of the assessment has to be by terminal written assessment.
grading system eighth-grade system: A*,A,B,C,D,E,F,G; derived from aggregation of marks. Typical spread of percentage score A (80%) E (25%) central mechanisms for grade boundary adjustment for each assessment occasion linkage of grades with National Curriculum currently subject to discussion	*grading system* Five-grade system: A,B,C,D,E. derived from aggregation of marks. Typical spread of percentage score A (80%) E (25%).
assessment model: overall emphasis on reliable external assessments; therefore an emphasis in the system on externally-set knowledge tests; other assessment components (e.g., coursework) regulated by external quality control measures (e.g., central scrutiny of samples of coursework). *Differentiation* of individual student performance is seen as a desirable feature of the system; i.e. the capacity to reflect different students' abilities/performance through a broad-band grading system (see grading above)	*assessment model: overall* as for GCSE.

NCVQ control

effected through consensual arrangements which are strongly re-inforced through funding arrangement for Further Education, Government training programmes and industrial training

GNVQ	**NVQs**
key criteria GNVQ criteria. Code of practice on external testing	*key criteria* NVQ criteria. Common accord for NVQs
content all awards are made up of units all units should comply with a standard GNVQ model (see annex 1): • elements • range • performance criteria • evidence indicators	*content* all awards are made up of units all units should comply with a standard GNVQ model: • elements • range • performance criteria • evidence indicators
size all awards must include a uniform number of mandatory units and optional units Advanced GNVQ is notionally a two-year full-time programme, Intermediate and Foundation both one-year full-time programmes	*size* different awards can contain different numbers of units NVQs are not tied to a particular location or duration of learning
form of assessment primarily coursework - focussing on assignments and projects; mandatory units carry an end-of-unit 30-40 item objective tests; this is mastery-based, with a fixed 70% pass mark	*form of assessment* no fixed regulations regarding the balance of different forms of assessment; methods of assessment used for a unit must be valid for the type of performance it demands
grading system not based on aggregation of marks; all units specifications must be met in full, then three-grade system - pass, merit, distinction - on the basis of additional criteria (e.g., planning); One third of total evidence must satisfy these additional criteria All external tests must be passed	*grading system* not based on aggregation of marks; all units specifications must be met in full; ungraded awards; based on mastery
assessment model: overall heavily devolved model with an emphasis on validity and assessment through project and assignments. While it contains external tests, there is a *strong reliance* on internal assessment, which uses a wide variety of types of evidence in the assessment process. More emphasis on quality assurance measures (e.g., approval of schools & colleges; training of assessors) rather than quality control. Differentiation of individual student performance is not seen as an objective in its own right: the emphasis is on tests and assessment which demand coverage of the requirements of the award (see grading above)	*assessment model: overall* heavily devolved model with an emphasis on validity; particularly assessment of performance in work settings: the system is *dependent* on internal assessment, which uses a wide variety of types of evidence in the assessment process. More emphasis on quality assurance measures (e.g., approval of NVQ centres; training of assessors) rather than quality control. The assessment is based on mastery and not on differentiation. The awards are ungraded

Convergence: Movement Beneath the Surface

I have focused on the diversity of the segments of the system. This diversity is not superficial; key differences exist in relation to each of the factors identified at the beginning of this chapter. These differences are of crucial importance since they are emerging as key points of tension between agencies and strategies in each segment of the system. However, to focus exclusively on these differences can mask some general trends across the system as a whole:

- since the mid-1980s, criterion-referenced assessment has been fundamental to the revision of GCSEs and some A levels, and to developments in assessment in vocational education and training (Jessup, 1991; Wolf, 1993; Wood, 1991)

- the National Curriculum - with its *statements of attainment* and *programmes of study* - focuses on clear presentation of content and assessment methods and aims to avoid over-prescription of teaching and learning methods (DES, 1988 and Dearing, 1994). This principle is shared by the GNVQ and NVQ models: GNVQ and NVQ units do not prescribe the nature, location or duration of learning (Jessup, 1991; NCVQ 1991)

- an assessment-led strategy for change; agencies increasingly recognise that assessment and certification is the strongest lever for effecting change (Jessup, 1991; TGAT 1988). It is not a question that learning methods are unimportant, it is simply that greater, and more rapid change has been achieved through centralised change in assessment and certification arrangements (Salter & Tapper, 1981). One of the key developers in the innovative Suffolk Science GCSE programme (with 65,000 candidates per annum) has stated that the development was "... unashamedly assessment led ...".

- increased direct regulation of the content of academic and vocational awards by agencies operating under a direct Government remit. This includes a strong emphasis on public accountability of all individuals, institutions and agencies involved in the provision of education and training

- increasing detail in the specification of content and of assessment objectives. This a trend in both the vocational and the academic parts of the system; NVQ units have displayed a tendency to increase in detail and length; GNVQ units may move towards more detailed *range* statements; GCSE and CSE syllabus specifications and assessment objectives are becoming increasingly detailed and focused. It should be noted that more detail does not necessarily result in increased content in each award, but in greater specificity in the content which should be covered

- the existence of a simplified vocational framework has allowed people to understand a system which was previously disparate and unintelligible. People may have been familiar with individual awards, but the system - as an aggregation of awards from different bodies - was incoherent and fragmented. The coherence of the vocational system may indeed be beginning to influence the design of academic awards

Summary

The analysis presented in this paper might give an impression of pessimism. I have attempted to characterize the factors which affect convergence and divergence in the academic and vocational pathways in the system. However, there is substantial room for optimism that greater vertical and horizontal integration can be achieved in the system in England and Wales, and that the pace towards greater integration will be rapid.

Modularisation of GCSE and A/AS is increasing, and demands from schools and colleges for modular syllabuses are strong, and increasing. This in part mitigates recent failures to effect a broadening of A-levels (Macfarlane E, 1993), since modularisation helps articulation with the unit-based GNVQs and NVQs. Schools, colleges and higher education institutions are increasingly adopting approaches to timetabling, programme design and management which enable effective exploitation of the flexibility offered by modular/unit-based awards. This is consistent with a commitment to individualised learning, where (i) institutions can be responsive to students which arrive with different collections of modules/units (ii) can offer students different collections of modules/units in tune with their motivation and their aspirations for progression. For example, one combination of engineering-oriented units if the student wishes to progress to research in higher education and a different combination if s/he wishes to progress to employment in the Engineering profession.

A system where modules/units with an academic focus and those with a vocational focus are stated in the same way will allow effective merging of the academic and vocational routes. However, as the above analysis makes clear, this has not yet been achieved; modular GCSE and A/AS continue to be stated in a very different way to GNVQs and NVQs. Through closer contact - which has been created by the implementation of GNVQs - the two sides of the system are increasingly familiar with the different methodologies used to state the different qualifications. Which model will predominate is difficult to predict, since:

- the key agencies - NCVQ, SCAA, ED and DfE - are currently engaged in intensive discussions to reconcile some of the contrasts between (i) GNVQ-NVQ model on the one hand and (ii) GCSE and A/AS on the other. Predicting the outcome is highly problematic; there is not complete compatibility in the imperatives of the different organisations. For example, in recent years there has been a tendency to restrict coursework in GCSEs, but GNVQs place a very strong emphasis on validity in assessment, thus using continuous assessment by teachers of students' work as the key component of the assessment model

- the research and development community remains divided; intermixing of careers across the academic/vocational divide is unusual, but is increasing. With more contact between this community, it is likely that aspects of the outcomes model will be incorporated into the specification of awards, and that quality control and assurance mechanisms (e.g., central scrutiny of evidence/coursework) will become more prominent in vocational awards. (Bodies traditionally involved in the development and administration of GCSEs and A/AS are becoming involved in the development and administration of NVQs, and it is likely that they will be invited to become GNVQ awarding bodies in 1997)

It is predicted that the number of NVQs being offered in higher education (HE) will increase significantly (Robertson, 1994), and the implementation of GNVQs in HE is being considered. Already, applicants with vocational qualifications being accepted by HE have risen as a percentage of total admissions (from 13% in 1986 to 19% in 1992). Government's planned expansion of HE (NCE, 1993) is likely to contribute to this pattern, since expansion is likely to come from those applicants who hold vocational or other qualifications (such as specific access awards) (Robertson, 1994; Smithers, 1994). Increased understanding of the NVQ and GNVQ models may be limited to discrete student groups and departments within each institution, but it is nontheless a development which will help with parity of esteem. Developments in the late 80s and early 90s in modularisation and credit transfer systems (CATs) are taking many Universities closer to the NVQ and GNVQ model. Higher education itself has been instrumental in suggesting that NCVQ explores the shape and viability of GNVQs at levels 4 and 5, for delivery in higher education. The actions of higher education have a strong impact on the remainder of the system (Richardson, 1991). If universities are both accepting large numbers of GNVQ students across a wide range of subjects and also running GNVQ programmes, this will tend to enhance parity of esteem.

There is evidence from a number of GNVQ schools and colleges that some students express a strong preference for the teaching and learning styles present in the GNVQ (CGLI, 1993). This of itself is inadequate to establish the parity of GNVQs, but is a crucial factor nonetheless. If the assessment model can also instill sufficient confidence in selectors in higher education and employment, then the conditions for parity of esteem are enhanced.

Offering the lower-level Foundation award alone would send strong messages that the vocational pathway is of a lower level, and is for students of lower ability This would have a very deleterious effect on the status of the GNVQ at all levels in the framework. Therefore, the offering of both Intermediate GNVQs as well as Foundation GNVQs in the 14-16 segment is a crucial part of avoiding a low status vocational track.

Credit accumulation of modules/units is a fundamental part of the GNVQ and NVQ models. Units are available from a wide variety of Awarding Bodies and in a wide variety of settings - schools, post-16 colleges, training providers, universities, and in employment. An appropriate record of achievement which enables recording of cumulative achievement and acts as a focus for planning progression has a crucial role to play. England and Wales have designed and adopted a single National Record of Achievement (NRA) to fulfil this role. The main use of the record is in schools - where 90% of schools use them for reporting the achievements of school leavers (approx 600,000 per annum); and is used in Government Training programmes. However, whilst the NRA is enjoying increased use in schools, its status is not sufficiently high, and is used by too few receiving tutors (FE colleges), admissions tutors (in HE), and industry selectors (Garforth, 1994).

One danger of a modularised/unitised system of qualifications is that arbitrary combination of units may be formed into incoherent qualifications. Such a system can also stimulate proliferation of awards (CSUP 1992; SED 1992). Funding systems can be oriented towards the acquisition of certain combinations of units and full awards - e.g., NVQs, modular A levels - but this can have negative effects on allowing credit accumulation of individual units over an extended time period.

Of more significance as a remedy is the emergence of the concept of 'curriculum entitlement' (IPPR, 1990 and Morris, 1991). Statements of curriculum entitlement can include specification of the breadth and balance of programmes; of commitment to processes such as formative assessment and action planning; and the provision of services such as careers guidance and student counselling. Currently, these are emerging from schools and colleges as a means of structuring the full programme which they offer, including programmes which combine academic and vocational components. Usually, such statements are whole-school/college 'policy statements' or 'mission statements'. They are an individual institutional response to problems of horizontal and vertical integration; however, this concept of entitlement has assumed an increasingly significant role in discussions on the revisions to the National Curriculum and on vocational options in the 14-19 segment of the system (Dearing, 1994). This concept of entitlement may be crucial in a unit-based or modular system which allows programmes to be created from different combinations of 'academic' and 'vocational' units.

Mechanisms for the measurement of institutions' performance and key funding mechanisms remain focussed on students' attainment of complete awards (Goldstein et al..., 1993). In particular, reporting arrangements for showing the performance of individual schools (league tables) and FE colleges are not based on the acquisition of individual units. This gives rise to the anomaly that a student may acquire 11 units of a 12-unit award in one institution, then move on to a second institution to gain the final unit. The award would only register against the performance results of the second institution. A move to an awards system which is based on credit accumulation of units/ modules would require a fully-compatible funding and reporting systems.

Funding systems and league tables are highly instrumental in establishing parity between academic and vocational qualifications. During 1993-4, Government agencies have been highly responsive to NCVQ's requests to ensure that these are compatible with the commitment to establishing parity of esteem for GNVQs. They are not a sufficient condition for securing parity of esteem, but they are a powerful pre-condition.

The GNVQ model promotes approaches to assessment and learning which appear to have highly beneficial effects on learner attainment and on increased participation (NII, 1993; ED,1993). These are consistent with current Government aims (DTI & ED, 1994). Indeed, the initial targets set for GNVQ look likely to be achieved without difficulty. In using internal assessment—regulated by external verifiers visiting each school and college—the assessment regime is compatible with the concept of "educational assessment" advocated by key members of the research community (Gipps, 1994). This emphasises maximisation of learner attainment through assessment which presents optimal conditions to the learner, rather than (ii) maximisation of comparability of assessments made in different locations and on different occasions.

I do not believe that the current arrangements in the UK are stable. Within current arrangements, there is a capacity for schools and colleges to construct programmes which will combine academic and vocational components. But this is inadequate as a system-wide response to the tensions I have outlined in this paper. There is strong public and Government desire for better vertical and horizontal integration in the system (a recent British Institute of Management survey indicated that

42% of their members desired an integrated post-16 system, with only 9% preferring a system with separate A/AS and vocational provision). Combined with clear differences in curriculum models and boundary tensions between different agencies, this is likely to promote change in current arrangements. The current system is not technically underdeveloped - there are interesting models of modular and unit-based awards, robust assessment systems and effective learning approaches. The changes, compromises and trade-offs which covergence will involve can be managed in such a way that they make best use of these. If this is done successfully, the emerging system will represent two steps forward, not one step back.

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ANNEX 1. NVQ Framework - Levels

The NVQ Framework currently has five levels - the following definitions are intended to be indicative rather than prescriptive and should be seen as clarifying rather than changing the definitions in previous NCVQ publications:

Level 1 - competence in the performance of a range of varied work activities, most of which may be routine and predictable;

Level 2 - competence in a significant range of varied work activities, performed in a variety of contexts. Some of the activities are complex or non-routine, and there is some individual responsibility or autonomy. Collaboration with others, perhaps through membership of a work group or team, may often be a requirement;

Level 3 - competence in a broad range of varied work activities performed in a wide variety of contexts and most which are complex and non-routine. There is considerable responsibility and autonomy, and control or guidance of others is often required;

Level 4 - competence in a broad range of complex, technical or professional work activities performed in a wide variety of contexts and with a substantial degree of personal responsibility and autonomy. Responsibility for the work of others and the allocation of resources is often present;

Level 5 - competence which involves the application of a significant range of fundamental principles and complex techniques across a wide and often unpredictable variety of contexts. Very substantial personal autonomy and often significant responsibility for the work of others and for the allocation of substantial resources feature strongly, as do personal accountabilities for analysis and diagnosis, design, planning, execution and evaluation.

Where lead bodies define a need for qualifications which provide a broad foundation for future progression, these may be incorporated at the appropriate level of the NVQ Framework.

ANNEX 2. *Example of NC Statement:*

Attainment Target 4/5: Presentation

Knowledge, skills and understanding in writing (ATs 3-5).

Level	*Statements of Attainment*	***Example***
5	Pupils should be able to:	*Words with inflectional suffixes, such as -ed and -ing, where consonant doubling ('running') or -e deletion ('coming') are required.* *Use a dictionary or computer spelling checker when appropriate.*
	a) spell correctly, in the course of their own writing, words of great complexity.	
	b) check final drafts of writing for misspelling and other errors of presentation.	
	c) produce clear and legible handwriting in printed and cursive styles	
6	a) recognises that words with related meanings may have related spellings, even though they sound different; recognises that the spelling of unstressed syllables can often be deduced from the spelling of a stressed syllable in a related word.	*Sign, signature; medical, medicine; muscle, muscular; history, historical; grammar, grammatical; manager, managerial.*
	b) check final drafts of writing for misspelling and other errors of presentation.	
	c) write fluently and legibly.	*Use a dictionary or computer spelling checker when appropriate.*
	d) show some ability to use any available presentational devices that are appropriate to the task, so that finished work is presented clearly and attractively	*Handwriting, typewriting, computer print-out, artwork, computer graphics, desk-top publishing*
7	a) spell (and understand the meaning of) common roots that have been borrowed from other languages and that play an important role in word-building; recognises that where words have been borrowed in the last 400 years, there are some characteristic sound-symbol relationships that reflect the word's origin.	*micro-, psych-, tele-, therm-; ch-in French words like 'champagne', 'chauffeur', 'charade', and ch- in Greek words like 'chaos', 'chiropody', 'chorus'; compared with the ch- in long-established English words like 'chaff', 'cheese', 'chin'.*
	b) check final drafts of writing for misspelling and other errors of presentation.	*Use a dictionary or computer spelling checker when appropriate.*
	c) write fluently and legibly.	
	d) show an increased ability to present finished work appropriately, clearly and attractively.	

ANNEX 2, cont . . .

Example of National Curriculum Program of Study:

25 Pupils should have opportunities to:

- write in a range of forms, including the following: notes, diaries, personal letters, chronological accounts, pamphlets, book reviews, advertisements, comic strips, poems, stories, playscripts;
- build on experiences of a range of different stories which they have read and heard, and/or through discussion of their work with the teacher or their peers;
- handle the following elements of story structure with increasing effectiveness: an opening, setting, characters, events and a resolution;
- build on their experience of reading and hearing a wide range of poetry, and write, both individually and in groups, using poetic features such as rhythm, rhyme and alliteration in verse forms such as jingles, limericks, ballads, haiku, etc.;
- write for a range of purposes including describing, explaining, giving instructions, reporting, expressing a point of view;
- use writing to facilitate their own thinking and learning, recognizing that not all written work will lead to a polished, final product;
- produce writing and proof-read on a word-processor;
- record their first thoughts, capture immediate responses and collect and organise ideas so that they are available for reflection;
- write in aesthetic and imaginative ways;
- organise and express their meaning appropriately for different specified audiences, *e.g.,. their peers, their teacher, known adults, younger children, unknown but designated adults, such as a planning officer, a road safety officer, a novelist or poet;*
- organize subject matter into paragraphs in the context of their own writing, recognising that these enable readers to identify relationships between ideas, events, etc. and to follow the structure of a story, account or argument, etc.

ANNEX 2 cont . . .

Extract From Business GCSE Syllabus Specification

2 Business Structure and Organisation

The various ways in which businesses may be organised and the appropriateness of each to different circumstances. The objectives of firms and the way in which they organise themselves to meet these. The relationship between size, risk, and growth.

2.1 Types of business organisation

distinguish between the principle characteristics of the main forms of business organisation in the public and private sector in terms of ownership, sources of funding, control and distribution of profit or surplus;

understand the benefits of limited liability

understand internal organisation structures, the interdependence and specialisation of departments and why structures will reflect the needs of the business and facilitate decision-making.

2.2 Scale of business

understand the relationship between organisation size and the nature of the business activity;

explain the reasons for growth and the methods by which growth may be achieved;

understand the relationship between size, risk and profit

ANNEX 2, cont . . .

Extract From GNVQ Intermediate Unit

Element 1.2: Investigation business organisations and products

Performance criteria

1. reasons for the location of business organisations are explained
2. scale and scope of business organisations are described
3. the product of business organisations is identified
4. different markets are identified
5. new products which meet identified markets are proposed

Range: *Reasons for location:* natural resources, labour supply, local or national government incentives, proximity of other businesses, transport services

Scale: number of employees, market share

Scope: local, national, multinational

Product: manufactured goods, services

Markets: needs, wants

Evidence Indicators: Examples of three business organisations indicating their scale, scope, product of the businesses and reasons for location. Proposals for two new products which would meet market needs. Evidence should demonstrate understanding of the implications of the range dimensions in relation to the element. The unit test will confirm the candidate's coverage of range.

Chapter 9
Occupational Standards and Business Ethics

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Introduction

This paper builds in large part on recent British experience, particularly on work which I undertook recently with colleagues from the University of Sussex for the Employment Department. [Steadman, Eraut, Cole and Marquand (1994)] The title of the present paper may suggest that it is simply a discussion of the relationship between the British programme to define standards for a wide range of occupations, the relationship of the questions which it raises to the growing interest in business ethics and the questions which this raises for the appropriate nature of training - or learning - and assessment of that learning.

Although the paper does cover some of this ground, it is mainly concerned to set the work which we did into a wider context. A quotation helps to set the scene:

> "I think it is high time that business people . . . pay more attention to the vast circus in which we perform our commercial tricks.
>
> We are in the middle of a cataclysmic economic shift; and it is causing cataclysmic social dislocation . . . **Business as usual and wholesale denial are unacceptable**." (My emphasis)
>
> (Peters, 1994)

The point of this quotation is less what it says than who said it. In the same newspaper article, Tom Peters, one of the gurus of American capitalism, describes himself as 'a capitalist through and through'. How have we reached the position where a leading popularizer of management thought can express such doubts about the conduct of business as usual?

Since the collapse of communism in 1989 there has been a great deal of triumphalism in the West. Francis Fukuyama (1993) has argued that we have seen 'the end of history'. It has become commonplace for commentators to start their arguments by asserting that there is no longer any viable alternative to capitalism.

Recently the triumphalist tone has become more muted. This is not just because much of the West is in the grip of recession. It is not just because of a series of episodes of sleaze and corruption - financial corruption in Italy and France, corruption in the conduct of policy in Britain, one of the frequent waves of political muck-raking in the United States. It is not just because of the rejection in the ballot box by East European states of regimes which have tried to follow a capitalist regime of shock tactics and deregulation too fast—first in Poland, then in Russia, in Lithuania and in

Hungary. It is not just because of the resurgence of extreme nationalism, from Zhirinovsky in Russia to the rise of the extreme right in Italy, for example, and in Belgium and even in parts of the East End of London. Extreme nationalism is, alas, a usual response to extreme economic despondency. It can lead to the disaster of former Yugoslavia. And despondency and apathy have been signalled in no uncertain way by the absent voters throughout the European Union in the elections in June 1994 for the European Parliament.

By contrast, there was relative stability during the 1980s. At the time, there was despondency about the condition of capitalist societies, but what seems to have happened since then is that the simple certainties of life in the Cold War period have been replaced by a situation too complex to be handled by simple nostrums. The institutional behaviors developed after 1945 and to suit the long period of economic growth in the 1950s and 1960s cannot cope with the new circumstances. New, more appropriate behaviors have not yet been developed to take their place.

This paper discusses a very small step towards developing such behaviors. It:

- describes work on the ethical dimension of occupational standards and sets it in its British context;
- attempts to start to position Britain in the broader spectrum of Western capitalist behaviors;
- and poses a series of questions.

Case Study - Britain

This case study briefly describes the work on ethics and occupational standards which my colleagues and I undertook (Steadman et al., 1994) and the context in which it was set:

- the occupational standards programme;
- the rising concern with ethical questions within it;
- the interlinked value structures which underlie it;
- the growing concern with business ethics and broader stakeholder approaches;
- use and embedding of the new occupational standards and associated qualifications.

It then relates this to the broader context, first in Britain and then more widely still.

The project was undertaken in order to provide the Employment Department and those whom it appoints to set occupational standards with guidance on the way in which such standards and the associated vocational qualifications might capture ethical issues.

The Occupational Standards Programme requires explanation, so as to understand how the need for the project had come about. In England and Wales, there had been no concerted effort by government to develop a national framework of occupational standards and associated qualifications until the National Council for Vocational Qualifications was set up in 1986 "to develop a system of vocational qualifications which is comprehensive, relevant, credible, accessible and cost-effective." (Manpower Services Commission, 1987 paras 4.9-4.10) This is done is by helping "industry and commerce to develop competence standards which will be incorporated in the qualifications the council proposes". The new qualifications structure is intended to 'allow people to demonstrate clearly what they can do as well as what they know; and to progress with ease to learning and acquiring more skills without going back over ground already covered.' (Employment Department and Department of Education and Science; Cmnd 9823, 1986)

Since 1986, activity has been intense. More than 100 Industry Lead Bodies have been developing qualifications at 5 levels, from Level 1 - below craft level, to Level 5 - professional level. Standards and matching qualifications covering the occupations which employ more 80% of the workforce are now in place. The large number of lead industry bodies are being amalgamated into a much smaller number of Occupational Standards Councils, and work has started in several cases to re-examine the original standards set and to tease out commonalities between standards and qualifications from different occupations.

The programme has developed its own formidable corpus of methodology. Consultants work with the Lead Bodies to undertake functional analysis of occupational areas. The essential features of this analysis are that whole work roles rather than a series of tasks are considered. Starting from the whole role and its **key purpose** a series of units of competence is derived. The focus is on outcomes - what the work is intended to do and what function it fulfils -rather than on the inputs to training, its processes and methods.

In this context, competence is defined as 'the ability to perform the activities within an occupation or function to the standards expected in employment'. (Training Agency, 1989 p.2) Competence is not the ability to perform a task or a group of tasks but the ability to perform the full range of activities.

The document goes on to explain that there are four dimensions to competence, or four "components of competence", in this view of whole work roles. There are not only technical or task skills, but also the skills needed to manage the task, the skills needed to cope with variance and unpredictability and the skills which are needed to relate the work role to its wider environment.

The structure of a set of standards starts with the **key purpose.** Thus the key purpose for managers is 'to achieve the organisation's objectives and to continuously improve its performance'. (BTEC, 1992 p.18 et al.] The key role for trainers is 'to develop human potential to assist organisations and individuals to achieve their objectives" (TDLB, 1992 p.2) and the key purpose of social workers working with children, young persons and families is 'to protect and promote the welfare and development of children and young persons, in partnership (wherever possible) with their families, but ensuring that the welfare of the child/young person is paramount'. (Asset Programme, 1991 p.114)

Within the key purpose, a number of main areas or roles is distinguished for each standard. These are sub-divided into units of competence and each unit is further sub-divided into elements.

For each element there are performance criteria. Each criterion defines one characteristic of a satisfactory performance of the element. There is an indication of the performance evidence required for assessment and guidance to assessors. For each element there are also range statements, describing the range of contexts and applications in which a competent person is expected to be able to carry out work within the element to achieve a satisfactory outcome. There is also an indication of supplementary evidence required, in the form of knowledge of methods and knowledge of data or information.

Now this methodology has been subjected to a great deal of criticism, much of it relating to problems of implementation and some of it rather ill-informed. The most interesting criticisms in the present context concern the adequacy of functional analysis itself as a methodology for deriving standards. It is alleged that the whole is lost in dividing the work role into a series of components in this way and providing assessment criteria for each one. The debate remains unresolved. There are those on the one hand who say that functional analysis is a useful way of drawing attention to the necessary dimensions of competence, but it **must not** be used to the exclusion of examination of overall performance. On the other hand there are those who assert, or who behave implicitly as though they believe (and the unthinking believers are probably the more numerous) that the individual components are the whole of the story.

It is also alleged by critics of the system that the emphasis on assessing **performance** is such that insufficient attention has been paid to **knowledge and understanding**. Now to the extent that this criticism has force, it is either a form of the point above, that functional analysis is too reductionist to be wholly acceptable, or it has something to do with the suggested methods of assessment. For the elements of competence are certainly defined so as to draw attention to the underlying knowledge and understanding which is required.

There are also assessment problems associated with the range statements. It is usually unlikely that people will have experienced the more extreme parts of the range or the more difficult contingencies, so that it will not be possible to observe their actual performance at these extremes. So a number of different forms of evidence have to be admissible when competence is demonstrated.

The Standards Programme started by developing standards mainly at Level 2 and Level 3, craft and junior technician levels respectively, where discretion is relatively limited, the range of risks or contingencies is relatively well defined and where much of the underpinning knowledge is relatively straightforward to describe. (Even so, the complexity of the task of developing an adequate standard is enormous).

Gradually the Standards Programme has moved into more difficult areas. The quotation of the key purpose statement from the social work area was selected deliberately. Occupations which have at their core the need for people to behave appropriately to a wide range of clients with personal and social problems demand overtly ethical and culturally conditioned stances, even for relatively low-level jobs. If development of standards for care workers raise difficult issues, the current development of standards for advice, guidance and counselling raises far more.

The development of standards for occupations where the mode of behavior with people in need of help is crucial to competence is one direction where development work has entered areas of ethical complexity. But there are others, less overt.

Firstly, whatever the level of occupation, the key purpose statement incorporates a tension. There is always a need to balance, decide, reconcile the demands of various clients with the demands of the environment or the community. Remember, managers "achieve the organisation's objectives **and continuously improve its performance**". Trainers "develop human potential to assist organisations and individuals **to assist organisations and individuals to achieve their objectives**" A couple of further examples of key purpose statements are:

> "To co-ordinate and manage human, material and capital resources, and associated production systems, in order to manufacture products which meet the needs of customers" (Manufacturing Manager)
>
> "To design, operate and manage financial and economic information and other systems to enhance value, effectiveness and efficiency and to enable managers to achieve controlled change within organisations, and thereby realize stakeholder objectives." (Professional management accountant)

All the examples have the worker as subject, with a function expressed in the verb, an object to be affected by the function and a qualifying or moderating phrase or clause. This inevitably introduces an element of judgement. Wherever there is an element of individual judgement, it is necessary to balance one set of demands against another. Wherever one set of demands is balanced against another, there is ethical content, whether explicit or implicit.

Secondly, as the standards process has moved from examining lower level occupations towards examining those at professional or near-professional levels, it has moved into areas where the skill increasingly lies in drawing on a large amount of underlying knowledge, which carries with it the ability to conceptualize a complex situation. The worker at professional level is characterized by the need to operate in circumstances which are unknown, require the application of considerable judgement and carry the potential for considerable damage to clients or collaborators or the community at large. Under such circumstances, the exercise of competence clearly entails **substantial** ethical judgements.

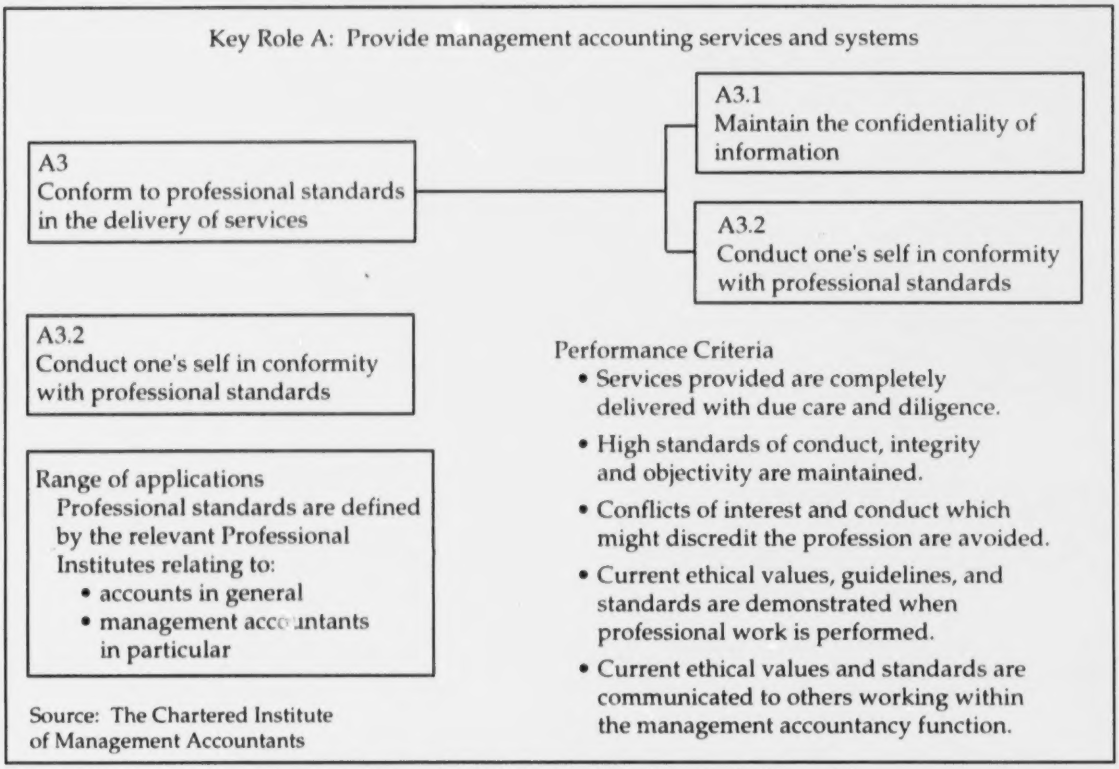
Figure 1 shows an example from the Management Accountancy standards which may make this clear.

Unit A3 of Key Role A, to provide management accounting services and systems, is directly concerned with conformity to professional standards in the delivery of services. The performance criteria in Element A.3.2 relate directly to ethical standards.

One further important dimension to ethical issues is that most individuals now work **within organisations**. Standards relate to individual performance and qualifications are awarded to individuals. But each individual operates within a context. That context is frequently an organisation, which will have its own code of ethical behavior, whether explicit or implicit. If it is explicit, it may be that it is an 'espoused theory' but not a 'theory in use'. (Argyris and Schon, 1978)

So the project which my colleagues and I undertook was intended to give guidance to people developing standards as to the ways in which it might be possible for them to handle all these ethical issues which were coming to occupy an increasingly central position in the standards and qualifications work.

Without going through all the arguments which we used, nor through all the results and recommendations, it is possible here to pick out some of the dimensions of the analysis which are most relevant to wider issues of business ethics.



Key Role A: Provide management accounting services and systems

A3
Conform to professional standards in the delivery of services

A3.1
Maintain the confidentiality of information

A3.2
Conduct one's self in conformity with professional standards

A3.2
Conduct one's self in conformity with professional standards

Range of applications
Professional standards are defined by the relevant Professional Institutes relating to:

- accounts in general
- management accountants in particular

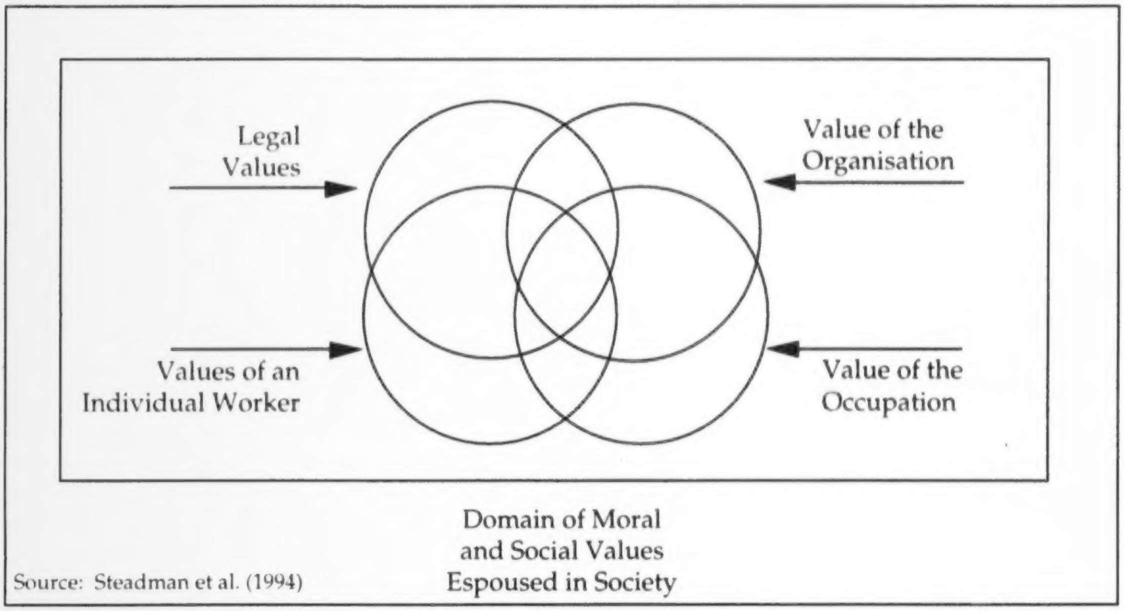
Performance Criteria

- Services provided are completely delivered with due care and diligence.
- High standards of conduct, integrity and objectivity are maintained.
- Conflicts of interest and conduct which might discredit the profession are avoided.
- Current ethical values, guidelines, and standards are demonstrated when professional work is performed.
- Current ethical values and standards are communicated to others working within the management accountancy function.

Source: The Chartered Institute of Management Accountants

Figure 2. Management Accounting Standards "Sample"

Firstly, as Figure 2 illustrates, we recognized that we were looking at the interface between four different sets of value standards, drawn from the wider domain of the whole range of moral and social values espoused by wider society. The report was concerned primarily with occupational standards, and so we were concerned mainly with the values of the occupation or profession. But we recognized that there would be problems wherever these did not overlap with the other sets of values, if the values purported to relate to the same types of circumstances.


Legal Values
Value of the Organisation
Values of an Individual Worker
Value of the Occupation
Domain of Moral and Social Values Espoused in Society

Source: Steadman et al. (1994)

Figure 2. Value Domains

First, consider individuals. It is largely up to them to decide whether they wish to enter an occupation or an organisation with whose values they do not concur - although we did recognizes the major problems created for those who had entered occupations or organisations, particularly public sector organisations where the availability of alternative employers is limited, and then found that the values of the organisation changed, so that they were working for an employer whose values they could no longer share.

But a more important theme in the report was the relationship between organisational values and occupational values. Figure 3 shows dimensions of the rich fabric of moral accountability in the context of work. The moral accountabilities shown in Figure 3, especially the horizontal ones between parts of the organisation and its external stakeholders are governed by law, but the relationships go beyond this. The law provides a minimum level of performance; organisations which care about their relationships with their stakeholders usually take care to develop a level of relationship of far higher quality than the minimum which the law requires.

Thus the report suggested that for an organisation which takes its moral accountability seriously —towards stakeholders, especially towards the internal stakeholders, the workers themselves— commitment to a series of goals was needed. The organisation needs to:

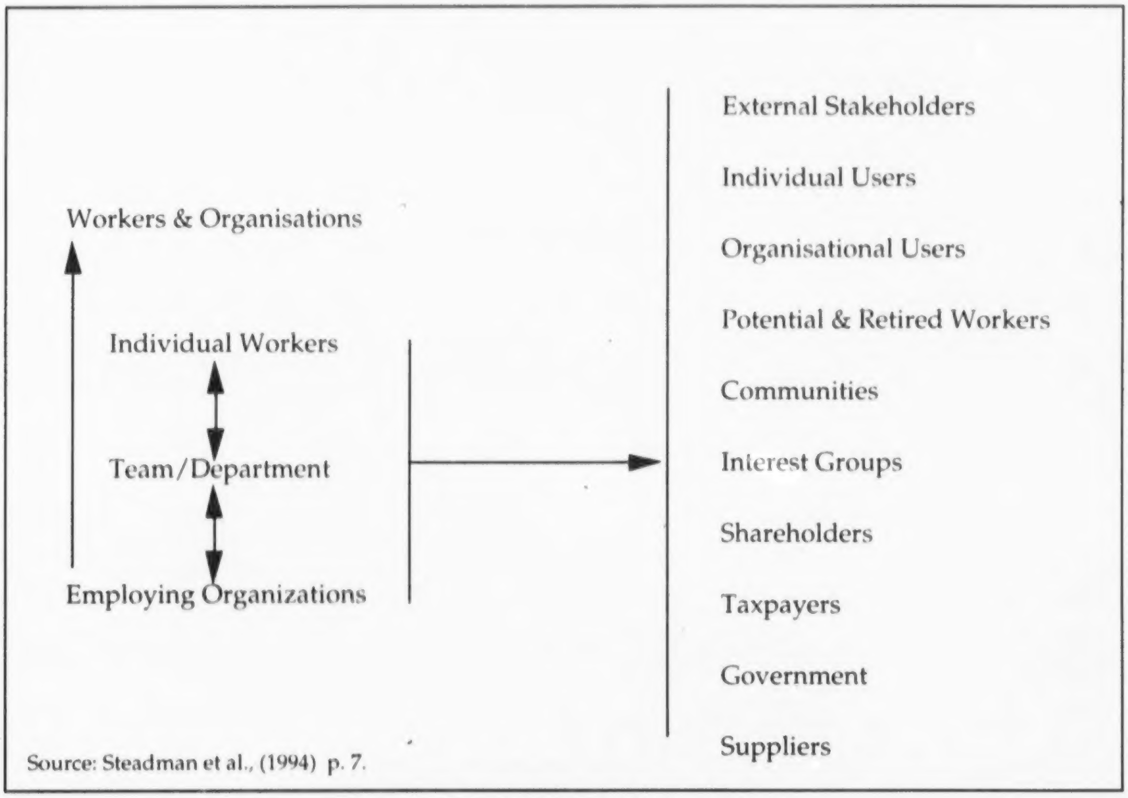
a) set, state and communicate the moral values on which its accountability relationships are founded;

b) develop procedures and advice to underpin the application of those values in practice;

c) monitor consistency of actual practice and espoused values, and take appropriate action to draw them closer together;

d) develop employees' ability to recognizes ethical issues in their work and apply appropriate values and procedures competently."

(Steadman at al., 1994 pp.42-43)


Workers & Organisations
Individual Workers
Team/Department
Employing Organizations
External Stakeholders
Individual Users
Organisational Users
Potential & Retired Workers
Communities
Interest Groups
Shareholders
Taxpayers
Government
Suppliers

Source: Steadman et al., (1994) p. 7.

Figure 3. Moral Accountabilities at Work

Now these are demanding requirements. Many firms, for example, still do not communicate clearly to their workers about anything. For example, in 1990 one-sixth of British firms neither held regular meetings (at least once a month) of junior managers, nor of senior managers, nor had any management chain of communication, nor any bottom-up communications such as a suggestions scheme or a regular newsletter, let alone a consultative committee. (Millward, 1994 p.85) Only a few firms have sufficiently explicit training strategies to be able to be sure that they are trying to develop the competence of all their workers in any respects, let alone with regard to the ethical dimension of their work. For example, 27% of firms in a recent survey had no personnel strategy at all, let alone a written one (Spilsbury, M., Atkinson, J., Hillage, J., Meager, N., 1994 p.19) and 19% do not assess the training and development needs of their employees, whether in a formal training plan or in any more informal way (Spilsbury et al. 1994 p.28, citing Employers' Manpower and Skills Practices Survey). But standards are of course intended to indicate good practice, not current practice.

Moreover, we can relate the approach in the report to a number of growing strands. There is the burgeoning interest in business ethics, evidenced in Britain for example by the recent foundation of (at least) two university chairs in the subject, and a new journal, *Business Ethics.* There is the rapidly increasing adoption of business codes, from 18% of large firms surveyed in 1987 to 28% in 1991. (Webley, 1992 p.22) Business codes are an indicator, albeit only an imperfect one, of company concern with ethical issues. Some of the companies which are most concerned to inculcate particular ethical values have deliberately chosen not to adopt a business code but rather to incorporate their ethical guidance in a host of training practices and guidance notes within the company.

Finally, there is the recent report sponsored by the Royal Society of Arts on 'Tomorrow's Company' which explicitly adopts a stakeholder approach to companies' responsibilities:

> "We believe that to achieve sustainable success tomorrow's company must take an inclusive approach.
>
> In an inclusive approach success is not defined in terms of a single bottom line, nor is purpose confined to the needs of a single stakeholder. Each company makes its own unique choice of purpose and values."

Moreover, tomorrow's company will

> "give a lead in all its relationships by defining both (purpose and values) in a consistent manner."
> (Royal Society of Arts, 1994 pp. 1 and 2)

The report has had wide publicity. Its recommendations may seem obvious to some, but they are revolutionary in the British context in a major inquiry involving 25 top business leaders and many others.

It is reassuring that the report on ethics in occupational standards found a high degree of commonality between the more highly articulated professional codes, the better articulated business codes and the principles of "Tomorrow's Company". At least it appears that those who are concerned with the elaboration with ethical behavior in the various work contexts in Britain share a common culture. But the report was not actually concerned with the nature of this common culture. Its primary concern was the technicalities of incorporating it in occupational standards.

In brief, the report found that assessment of qualifications - which is essential once standards have been converted into qualifications - would have to cover a series of dimensions:

- what an individual does him/herself;
- the willingness to challenge breaches by other individuals and groups;
- the intention to strive for ethical outcomes, even if others may prevent them;
- awareness of the way in which ethical questions underlie work practices;
- ability to analyse the courses of action available in particular situations, talking explicit account of ethical considerations;
- understanding of the options available to an individual when others in the organisation appear to be acting unethically.

(Steadman et al. 1994 p.38

The problem with this list is that it is hard to gather valid and reliable evidence about it from performance alone. Only the first item on the list can be assessed by direct observation. Moreover, over the time-scale while an individual is gaining a qualification, he or she is unlikely to confront many of the relevant types of ethical dilemmas.

However, there are plenty of methods of assessment other than direct observation of performance. The report lists some of them:

- the witness of colleagues;
- observation by a mentor;
- assessment by workplace assessors that correct procedures are followed;
- oral questioning; interviews; vitas;
- reflective accounts;
- projection techniques, e.g. what if . . . ?
- work-based projects which include ethical considerations;
- simulations and role play;
- skills rehearsal;
- case studies and assignments;
- evidence of prior achievement;
- written examinations or tests.

(Steadman et al, 1994 pp. 38-9)

The report argued that there should be triangulation of several types of assessment in every case. In this way an holistic judgement can be formed.

If standards developers adopt the report's recommendations and **if** the recommendations find resonance in organisations who are considering their own ethical codes, **then** the report will have helped to produce one step towards **explicit** awareness of the ethical dilemmas at work and awareness of the means of codifying and reinforcing 'ethical means of handling them'.

Different cultures of capitalism

The report which I have described is a very British piece of work. It is tied closely to British institutions - not only to the new standards and qualifications framework, but to the behavior of British professions and of firms in Britain. What wider lessons does it have? How widely shared are the cultural assumptions which underlie it?

It was suggested above that the assumptions are not universally shared, even in Britain. It is precisely because the assumptions are not universal that there is a need to articulate them. The problem of embedding new behaviours is always like this. If what is suggested is too far from current practice, it has no effect. If it is too near to current behaviours, likewise it has no effect. There is a need to strike the appropriate balance. The report was probably in tune with the needs of standards developers, but it is less clear that they themselves have achieved the more difficult task of being at just the right distance from the commonality of practice in their occupations.

For example, we know that the acceptance of the Investors in People programme is rather weak in smaller firms. We know that views about the nature of training and decisions about when it should be undertaken are extremely unsophisticated in many firms. [Spilsbury et al. (1994), Dench, S. (forthcoming)] Standards developers and those who advise them are perhaps trying to achieve something of a sleight of hand, by embedding more complex concepts in the new qualifications than many of the firms which support their workers in obtaining them are themselves yet able to adopt (and there is the collorary, that many of the more sophisticated firms think that their own practice is far ahead of anything in National Vocational Qualifications). But these are the normal problems of embedding a new institutional framework.

A more fundamental question is raised by the fact that the United Kingdom occupies a particular position in the spectrum of capitalist cultures. Three telling measures from Hampden-Turner and Trompenaar (1993 and 1994) can be used to illustrate this. In *The Seven Cultures of Capitalism* they use the results of questionnaires administered to some 15,000 managers from around the world, from 1986 to 1993.

One set of statements between which they asked respondents to choose was:

- the only real goal of a company is making profit, or
- a company, besides making a profit, has a goal of attaining the well-being of various stakeholders, such as employees, customers, etc.

A selection of the results is shown in Table 1.

The English speaking countries lie at one extreme end of the spectrum in the extent to which they think that companies have no goals other than those of achieving a profit. The UK is admittedly less extreme than the USA on this, but it is significantly more profit oriented and less stakeholder oriented than other countries in Western Europe, to say nothing of Singapore and Japan.

Table 1: % of Managers Agreeing That "Profit Is The Only Goal"

Country	% agreeing with statement
USA	40
Australia	35
Canada	34
United Kingdom	33
Italy	28
Sweden	27
Netherlands	26
Belgium	25
Germany	24
France	16
Singapore	11
Japan	8

Source: Hampden-Turner and Trompenaar (1993 and 1994) p. 32

The second set of statements between which managers were asked to choose relates to the desirability of co-operation between businesses:

> "Two friends were discussing the way businesses interact.
>
> One said: "if you allow businesses to co-operate with each other, they will usually collude against consumers and the larger society by agreeing together to raise prices and/or restrain trade. They will do this for the obvious reason that it is in their self-interest to do so. Competition and still more competition is the only answer to this tendency."
>
> The other said "if you allow businesses to cooperate with each other they will usually pass on to their customers any enhanced effectiveness and economies of operations in the form of expanded trade. They will do this for the obvious reason that it is in their own interests and the customers' group interests for this to happen. Cooperating in order to compete with the wider world is the only answer."

Table 2 shows the proportions of managers from each country believing that ever more competition —the first statement—is the only antidote to collusion.

Again the English-speaking countries occupy an extreme position. On this topic the UK lies second only to USA. It is far from the rest of Europe and the two Far Eastern countries in its rejection of co-operation between businesses than in its belief in the single-minded pursuit of profit regardless of the social networks within which companies must act.

Table 2: % of Managers Believing that Ever more Competition Is Better than Cooperation

Country	% agreeing with first statement
USA	68
United Kingdom	65
Canada	64
Australia	62
Italy	51
Netherlands	50
Belgium	48
France	45
Germany	41
Sweden	39
Japan	24
Singapore	19

Source: Hampden-Turner and Trompenaar (1993 and 1994) p.71

The third example is particularly interesting in the context of the functional analysis described above, which is used when setting British occupational standards and which disaggregates the work role into tasks. Managers were asked to choose between two statements:

> "a company is a system designed to perform functions and tasks in an efficient way. People are hired to fulfil these functions with the help of machines and other equipment. They are paid for the tasks they perform"

or:

> "a company is a group of people working together. The people have social relations with other people and with the organisation. The functioning is dependent on these relations."

Table 3 shows the proportions of managers agreeing with each statement.

Table 3: % of Managers Believing that the Company Can Be Viewed Only as a Set of Tasks and Functions

Country	% agreeing that the company can be viewed as a set of tasks and functions
USA	74
Canada	69
Belgium	68
Netherlands	61
Australia	59
Sweden	56
United Kingdom	55
Italy	46
Germany	41
Singapore	39
France	35
Japan	29

Source: Hampden-Turner and Trompenaar (1993 and 1994) p. 32

The British position is less extreme on this one (and note that the British approach to standard-setting **does** bring in relationships, but **within** the functional units). The North Americans were the most extreme in their functional view, but within Europe both Belgium and the Netherlands are far more reductive in their view of companies than the British are. The Italians, the Germans and the French are significantly more prone to view the company as a structure of social relationships, though none so much as the Japanese.

Japan is at or near the other end of all three Figures from the United States in particular, and its acolyte, the United Kingdom. As Hampden-Turner and Trompenaar point out, almost everyone pays lip-service to the way in which the Japanese economy operates. Yet it is at the opposite end of the spectrum from the USA on almost all their tests. If indeed it is true that the appropriate way to operate under modern economic circumstances is to move towards emphasising the company's relationship with all its stakeholders, towards emphasising the value both to the companies and to society of co-operation between companies and towards viewing companies in large part as a social network, then it is clear that the British have further to go than most other Europeans. The change that is necessary in Britain will be less necessary elsewhere. Moreover, once you look in more detail at other attitudes held by managers in the different countries, it becomes clear that you cannot expect to see the same practices in good firms as between one West European country and another.

Thus firms in different countries tend to be differently organised, with different views of what counts as appropriate organisational culture and behavior. Moreover, the role of training in particular and especially company training need not be similar from one country to another, even where the view of what counts as competent performance and certainly of competent ethical performance is still much the same. It is only one of the important influences on an individual's ethical performance at work. Figure 4 indicates its place in a more general framework.

Following Figure 4, we can start from the wider domain of economic and societal values -which differ significantly from one country to another even among close neighbors - and recognise that the development of competence in ethical performance by individuals is influenced by their home, by their educational experience, by training which they receive before they have any connection with the workplace and by training within the workplace or supported by it. Moreover, the value systems of organisations differ, so that some of what they seek will vary from one to another. It is clear that different countries have very different educational systems and initial training systems, so that by the time we come to consider training related to the workplace, the playing field is far from level even if the goal posts are the same. If we add to this the demonstrable fact that the view of "competent performance" is socially constructed, we can see that lessons from quantitative comparative surveys of human resource management or development activity must be interpreted with great care.

Conventional wisdom would suggest, for example, that in Italy the influence of family networks is strong; in France, the educational system. In Germany, there is strong cultural glue in the systems of relationships between organisations, and between organisations and the state. In USA, the legal system supplies the glue. In the United Kingdom, much of what glue there was has been deliberately dissolved; there are now attempts to start to restore it through the education and training systems, and by business itself. The Employment Department project on ethics in occupational standards fits within this frame, as does the **Tomorrow's Company** work, and many of the policy statements from the Confederation of British Industry.

Some will point out that the importance of multinational companies runs counter to my argument that national cultural differences are of major significance. If multinational companies dominate international competition and if a multinational company maintains a similar culture wherever it is located, then the account which we need to take of these national cultural differences is limited and diminishing. My only evidence on this is rather dated, but Hofstede (1984) showed, using data now about 20 years old, that the relevant cultural differences between managers of different nationalities within the same multinational organisation were readily observable.

The argument that different institutions are of differing importance in different countries in developing ethical, or indeed any other socially constructed views, implies that the direct transferability of training standards from one country to another is likely to be limited. Any transfer has to take account of these cultural differences. This has of course been recognised for some years by the European Commission, once it abandoned the effort to develop **European** qualifications and decided to accept the different qualifications from each member state, provided they have a minimum common core.

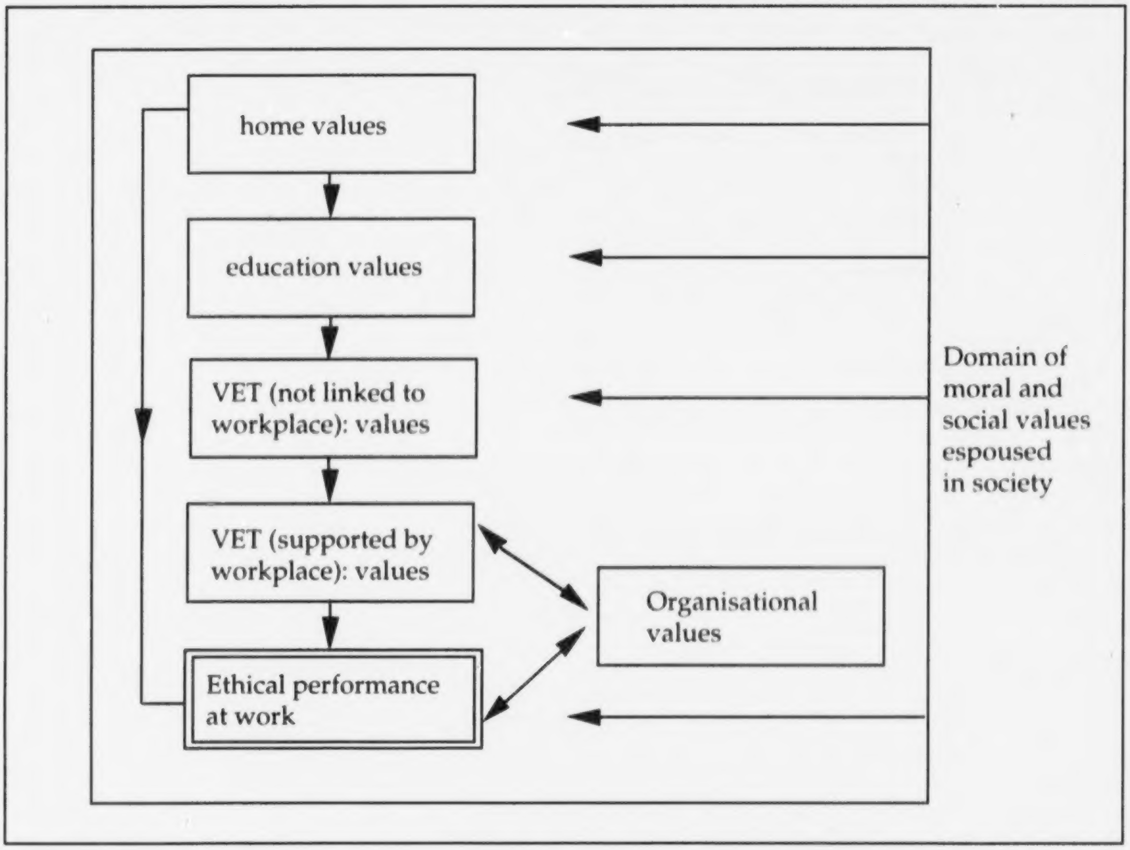

home values
education values
VET (not linked to workplace): values
VET (supported by workplace): values
Organisational values
Ethical performance at work
Domain of moral and social values espoused in society

Figure 4. Development of individuals' ethical performance at work

Conclusion - some questions

The purpose of this paper has been to set some recent British work on the ethical dimension of occupational standards into a very widely drawn context. The argument has suggested that occupational standards - which underpin occupational qualifications and provide the basis for training programmes - convey strong cultural and ethical messages. These are often implicit, but they can and should be made explicit if we wish to encourage some forms of behaviour rather than others. The argument leads us to be able to consider what we need to ask ourselves about the incorporation of the ethical dimension in occupational standards and qualifications. It has suggested that this is relevant to establishing a stable foundation for capitalism for the next century and has indicated some aspects of the nature of the range of different capitalist cultures and the role of different training systems within them.

The argument in the paper suggests that if we want to understand our own systems, in order to reinforce some parts of them, or in order to produce well-founded change, we need to address a list of ten difficult questions:

Ten difficult questions for all of us:

- What are the current values **in use** (Argyris and Schon, 1978) at work?
- What will their consequences be if they stay unaltered?
- Where, when and how are these values **in use** developed?
- What are the **espoused** values for people at work?
- What would their consequences be, if they were applied?
- Are the **espoused** values explicit?
- How wide and of what nature is the gap between **espoused** values and values **in use**?
- Do we wish to change either?
- Where do the points of leverage lie, given that they must be acceptable in a democratic society?
- On what can we draw to help us to manage the change?

In the example of the British study of ethics in occupational standards (Steadman et al., 1994):

- we were making espoused values explicit. It was necessary to do this in order to be able to help induce consistent values **in use**.

- Vocational Qualifications are one powerful point of leverage, democratic to the extent that the opinions of the groups affected are canvassed widely.

- We produced a process for use (in the British context) to help manage the change to a more explicit requirement to behave ethically at work and to help develop the associated competences.

The study was just one small - but complex - building block in the project to develop robust, ethically acceptable standards of occupational competence. The argument in this paper suggests that its lessons are much wider. It shows that something concrete can be done through the institutional framework of training to help to change the various cultures of capitalism. Given the present disarray, I suggest that the need is widespread to address the ten questions - piecemeal, and with varying priorities in different places and circumstances - but **now**. It is urgent that we try to rebuild cohesive competitive societies, which can overcome the malaise of most of the current versions of capitalism in the conditions of the current decade. We need to consider more explicitly our values for the individual, for the organisation and for society. We need to find ways to embed accepted values institutionally in order to provide a secure framework for living and working in the changed world in which we find ourselves. Work such as my colleagues and I undertook on standards and qualifications can play a small part in this, for training systems **express the values** of a wider whole.

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